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ABSTRACT

This report, compiled by the Pennsylvania Department of Education, offers an overview of education in Pennsylvania from the past through the present with future projections. Extensive use of data in the form of tables and graphs is used to analyze the three main sections of the book: demographic trends, basic education, and higher education. (Author/LD)

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Conditions of Education in Pennsylvania

Present, Past and Future

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February 1979

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CONDITIONS OF EDUCATION IN PENNSYLVANIA

ERRATA

Page	
iii	A section heading has not been listed under Chapter II. It should be introduced between the headings of pp. 85 and 94 as follows: Basic Skill Acquisition and the Student 89
22	The percentage figure for Bucks County was inadvertently omitted. It is 2.0 percent.
77	Footnote 2, Line 2, should read: "unless subject to special conditions" rather than "or subject to special conditions."
89	Third paragraph from the bottom, last line of that paragraph should read: i.e., median correlation).
91	Affective Goal number three in the list should read as follows: Interest in School and School Learning
92, 93	Next to last line of the second footnote in both Tables 35 and 36 should read as follows: merely suggests that a causal relationship is possible
163	Paragraph three, line one, should read as follows: ...in Chapter I, the birth decline.

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Dear Reader:

The Bureau of Information Systems has planned and worked a long time to develop this publication. It is hoped that the reader will see, sense and understand the conditions of education in Pennsylvania. Although this initial effort may not present all of the relevant indicators, I believe this publication should provide a good basis for improving the use of hard data to support the decision-making process in education. Most operational decision making is qualitative in nature, but the creative use of data should help policy makers to concentrate on the important issues.

The major source of data was from the Bureau of Information Systems. This publication was inspired by Mary Golladay, author of The Condition of Education. Mary and her staff at the National Center for Education Statistics were responsible for stimulating and encouraging me to set the direction for this publication. George Brehman has been responsible for the actual work of compiling and reanalyzing the data with effective help from all bureau staff.

Special recognition should go to the excellent assistance from the Division of Education Statistics. Without their documents this work would probably still be in the conceptual stage.

Special thanks is also due John Kehoe, Alfonso Zawadski and John Senier of the Division of Research for graciously taking the time needed to prepare materials for this publication despite their already heavy responsibilities.

My appreciation also is extended to Robert Newton of the Office of Budget and Planning at The Pennsylvania State University for use of his work projecting higher education enrollments and, in addition, to The Chronicle of Higher Education for permitting use of several charts from that publication.

Seon H. Cho, Director
Bureau of Information Systems

Introduction

Today there is a great deal of concern about the role and future of education in our society. As a consequence, there is a need for information about where education has been, the present status of education and the likely future of basic and higher education.

Despite the collection and analysis of large quantities of data about education there is a need to look for specific data that will act as indicators of status or trend. Such indicators, if regularly examined, can help us monitor what is happening to the important issues and concerns in education. Some of the issues that may concern us may not be regarded as important later, but, in general, we will always be concerned about issues such as costs and cost containment, enrollment growth and decline, labor market demand for our graduates, student discipline, etc.

This report is therefore the result of an effort to derive significant "indicator" data relevant to important issues in education insofar as the current data base permits. While making strong use of data collected by the Pennsylvania Department of Education it also uses data and projections from other sources of which the author was aware.

If this publication is well received, it will be updated at intervals.

As will be seen, data is presented, wherever possible, in the form of a graphic display or a relatively simple table. This has been done in order to make clear those trends or patterns believed to be of significance in understanding present or future conditions of education in Pennsylvania.

Chapter I

DEMOGRAPHY AND EDUCATION IN PENNSYLVANIA

The Educational Setting

Education is today, by any criterion, big business. Education in Pennsylvania is no exception. As can be seen in Table 1, some 337,256 Pennsylvanians were employed in the educational institutions of Pennsylvania during the school year 1975-76, and this figure represented an 8.8 percent increase in the numbers employed over the figure of 310,055 for 1970-71. Only the nonpublic schools had fewer employees in 1975-76 than in 1970-71. The public schools, despite enrollment declines, increased their staffing by 12.4 percent while the colleges and universities, which have yet to experience large enrollment declines, have increased staffing by only 2.9 percent.

Obviously, the public schools may have been faced with new roles or mandated requirements that have resulted in an increase in staff during a period of enrollment decline. This will be explored further in a later section, but it may be instructive to look briefly at recent enrollment changes for both basic and postsecondary educational institutions In Table 2 we see that the enrollments for both public and nonpublic schools have been dropping while the enrollments for the postsecondary institutions (colleges, universities, etc.) have until recently continued to rise. As will be shown later, the postsecondary institutions will not experience a substantial birth decline related drop until the early part of the 1980s.

Table 2 also indicates that there has been a steady increase in the cost per student at both the basic and the postsecondary levels. The matter of expenditures will be dealt with in more detail later in this report.

Table 3 is an attempt to give a perspective on the distribution of education employees and their proportionate representation in the public work force and in the state work force as a whole. As can be seen in Table 3 the employees of Pennsylvania's educational institutions represented 4.1 percent of the general work force and 34 percent of all state and local government employees in 1975. The vast majority (81 percent) of education professionals were employed in public schools (including postsecondary).

The Birth Decline

As can be seen in Figure 1, the number of births has fluctuated considerably over the years, with a major increase, the so-called "baby boom," beginning after World War II (1945) and ending after 1957. The baby boom followed by what might be called a "baby bust" that has continued to the present.

The impact of the birth decline is affecting basic education enrollments and, during the 1980s, higher education enrollments will be greatly affected.

In order to examine the impact of this decline more closely, actual live births are shown in Table 4 for the years 1957 to 1977 and as projected to the year 2001. Figure 2 graphically illustrates the decline between 1957 and 1976 and the expected increase in births between 1977 and 1991 due to the baby boom generation's

Table 1

Employment in Educational Institutions[1]

Year	Public Schools	Nonpublic Schools[2]	Postsecondary Schools, Colleges and Universities	Total
1970-71	198,936	21,018	90,101	310,055
1971-72	206,144	21,134	91,037	318,315
1972-73	216,191	20,838	92,383	329,412
1973-74	216,770	20,277	91,061	328,108
1974-75	222,216	20,973	93,920	337,109
1975-76[3]	223,543	20,972	92,741	337,256
Percent Change	+ 12.4%	- 0.2%	+ 2.9%	+ 8.8%

[1]Derived from Table 4, Durkee, Frank M., Education Profile of Pennsylvania 1960-61 to 1975-76, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education.

[2]Full-time equivalent teachers only.

[3]In 1975 there were 566,000 state and local employees in the Commonwealth of Pennsylvania.

Table 2

Enrollment and Per Student Costs at Pennsylvania Educational Institutions, 1961-76

(Part I)

Year	Enrollment[1] Public Schools (1)	Percent (2)	Nonpublic Schools (3)	Percent (4)	Total (5)	Public School Per Student (ADM) Costs[2] (6)
1960-61	2,529,954	81.4	578,429	18.6	3,108,383	$ 883.37
1970-71	2,362,817	82.0	517,151	18.0	2,880,968	973.00
1971-72	2,370,665	83.0	486,827	17.0	2,857,492	1,079.94
1972-73	2,361,285	83.8	456,102	16.2	2,817,387	1,165.21
1973-74	2,321,437	83.9	443,995	16.1	2,765,432	1,269.88
1974-75	2,277,451	84.0	433,392	16.0	2,710,843	1,425.39
1975-76	2,246,218	83.9	427,969	16.1	2,674,116	1,559.22

(Part II)

Year	Postsecondary Enrollment[3] Public (1)	Percent (2)	Nonpublic (3)	Percent (4)	Total (5)	Expenditure[4] Per FTE Public Student (6)	Per FTE Nonpublic Student (7)
1960-61	62,834	40.9	90,889	59.1	153,841	$2,208	$1,352
1970-71	183,834	57.2	147,402	42.8[5]	321,100	3,383	4,573
1971-72	194,735	55.6	155,313	44.4	350,048	3,790	4,700
1972-73	197,693	55.8	156,591	44.2	354,284	4,097	4,988
1973-74	204,036	56.9	154,839	43.1	358,875	4,284	5,373
1974-75	208,847	57.5	154,188	42.5	363,035	4,616	6,466
1975-76	219,456	58.0	159,013	42.0	378,469	4,921	6,823

[1]Selected Education Statistics for Pennsylvania series, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1970 and 1976, Tables 3 and 4.

[2]In selected issues of Our Schools Today: Public School Financial Statistics Report, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (Average Daily Membership based).

[3]Public postsecondary includes state-owned, state-related and community colleges; other institutions are included in nonpublic postsecondary. Data from Selected Education Statistics for Pennsylvania series, Division of Education Statistics, Pennsylvania Department of Education.

[4]Ibid., Table 13 on expenditures which were then divided by FTE enrollments.

[5]This percentage decline was caused by the following changes from private to public state-related status: Temple University (1965), Pittsburgh University (1966). In 1972 Lincoln University also became state-related.

Table 3

Relationship of Education Employees to Total Work Force, State and Local Government Employees and Distribution Among Education Institutions, 1975

1.

Total Pennsylvania Employees	Total Pa. Education Employees	Percentage
4,685,700[1]	192,349[2]	4.1

2. Education Employees by Segment[3]

	Number	Percentage
Public Schools	134,355	69.8
Nonpublic Schools	20,972	10.9
Public Postsecondary	20,770	10.8
Nonpublic Postsecondary	16,252	8.5
	192,349	100.0

3.

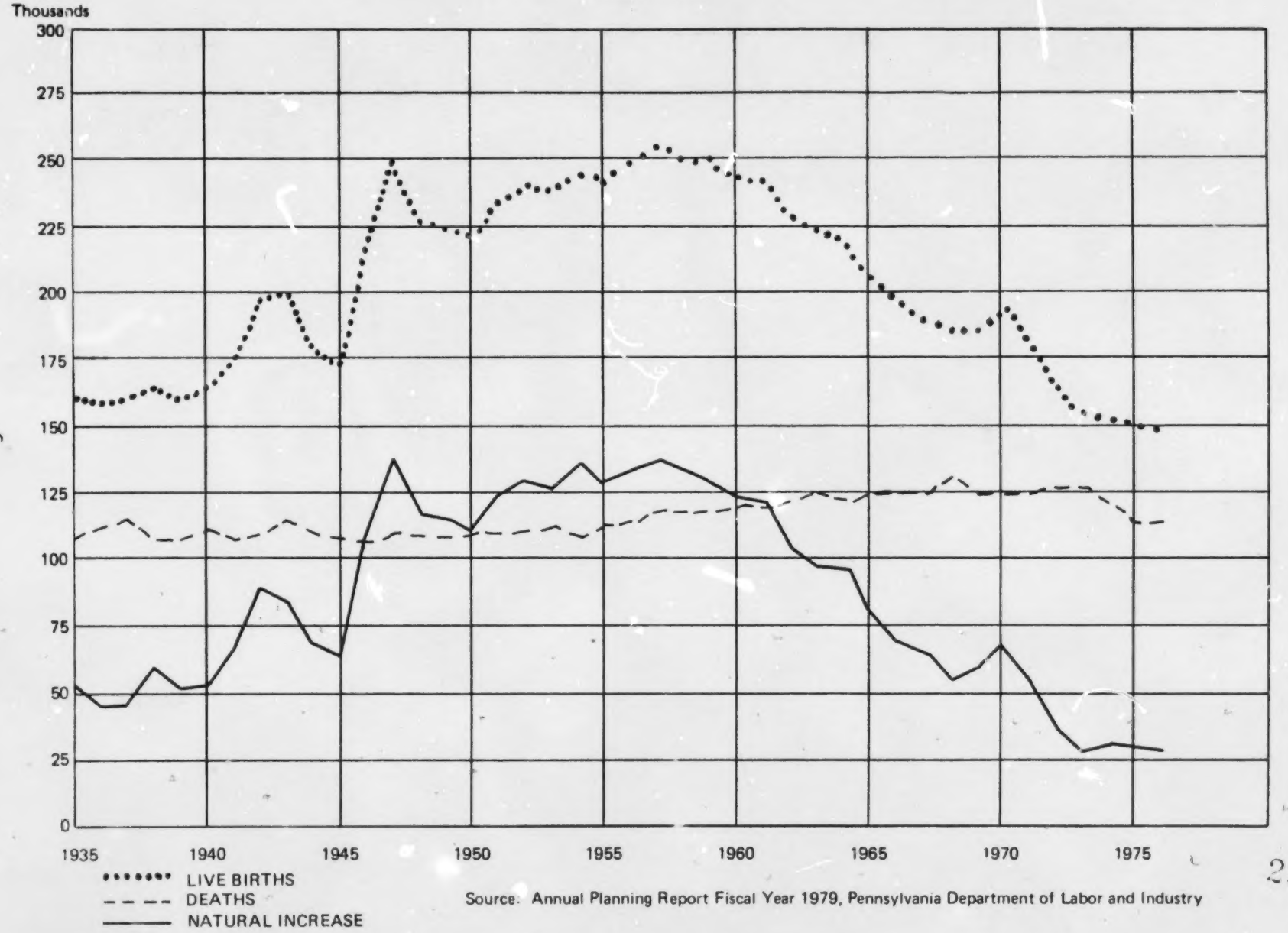
State and Local Employees[3]	Educational Employees	Percentage
566,000	192,349	34.0

[1]Pennsylvania Bureau of Employment Security, reported January 5, 1976 for November 1975.

[2]Selected Education Statistics, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1976. (These data do not include custodial, maintenance and some auxiliary personnel for whom data are not published.)

[3]Pennsylvania Abstract 1976, Bureau of Statistics, Research and Planning, Pennsylvania Department of Commerce, p. 117.

FIGURE 1
PENNSYLVANIA LIVE BIRTHS, DEATHS, AND NATURAL POPULATION INCREASE
1935 – 1976



Source: Annual Planning Report Fiscal Year 1979, Pennsylvania Department of Labor and Industry

coming into childbearing age. The projections shown in Figure 2 and Table 4 do not assume any marked increase in the number of babies born per thousand women of childbearing age. The projected rate represents the two children, late marriage and childbirth preference of today's young adult, which show no signs of changing.

Obviously the future of education will be affected as these waves of growth and decline in the number of births move up the age distribution.

Table 4

Actual (1957-1977) and Projected (1978-2001)
Live Births for Pennsylvania[1]

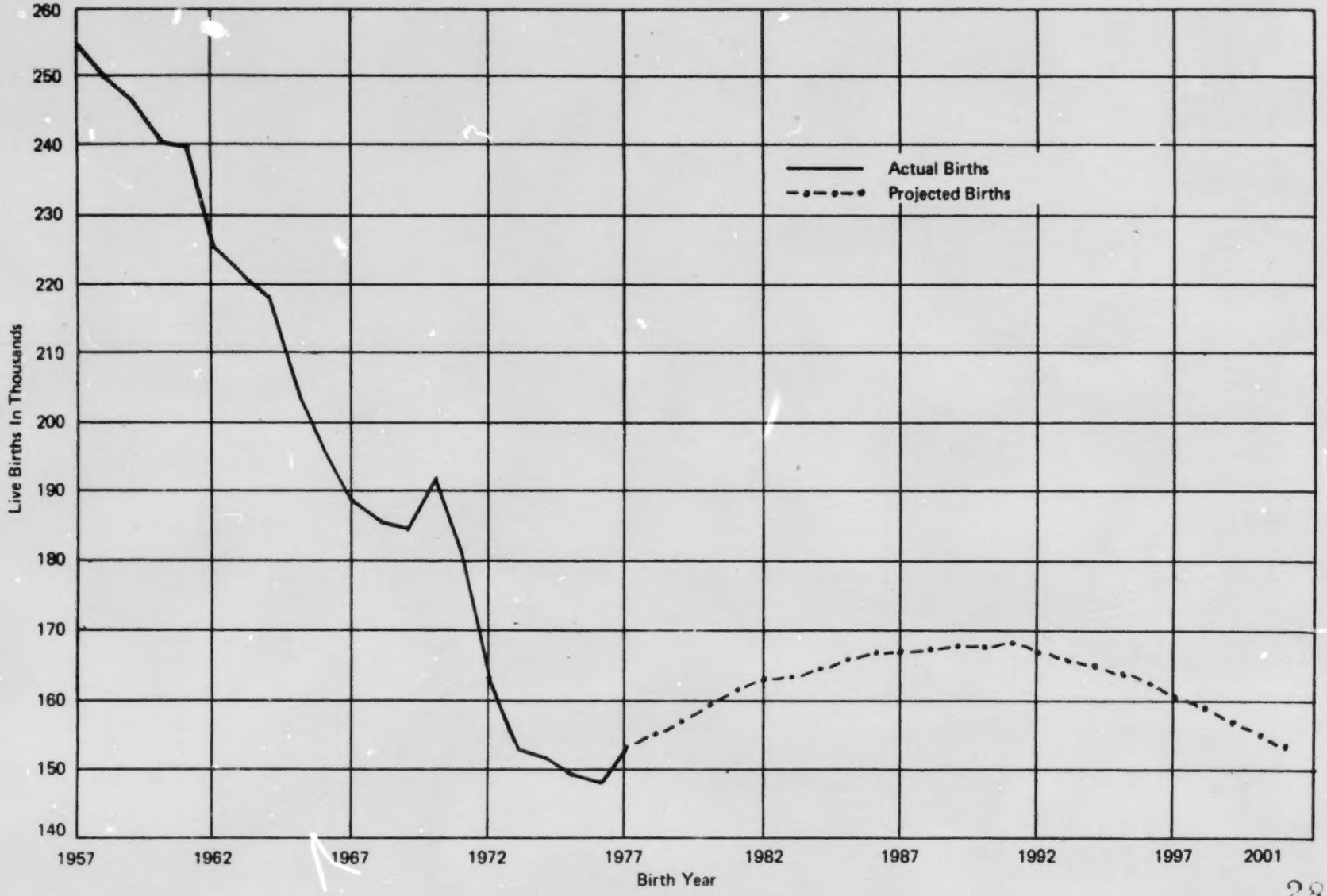
Year	Actual	Year	Projected
1957	257,997	1978	155,065[2]
1958	249,810	1979	157,254
1959	246,595	1980	159,442
1960	241,099	1981	161,642
1961	240,172	1982	162,769
1962	226,393	1983	163,428
1963	221,537	1984	164,616
1964	218,515	1985	165,800
1965	204,105	1986	167,001
1966	195,869	1987	167,307
1967	188,706	1988	167,606
1968	185,729	1989	167,908
1969	185,046	1990	168,210
1970	192,154	1991	168,507
1971	180,939	1992	167,324
1972	163,110	1993	166,135
1973	153,272	1994	164,945
1974	151,458	1995	163,761
1975	148,942	1996	162,546
1976	148,004	1997	160,760
1977	153,415	1998	158,970
		1999	157,182
		2000	155,395
		2001	153,585

[1]Projections by John Senier of the Division of Research, Bureau of Information Systems, Pennsylvania Department of Education.

[2]Preliminary birth count for 1978 was 152,564. Birth projections for 1979 and subsequent years shown here may therefore be about 3,000 per year on the high side.

FIGURE 2

PENNSYLVANIA LIVE BIRTHS 1957 TO 1977 (ACTUAL) AND PROJECTED BIRTHS 1978 TO 2001



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 5 and Figures 3 and 4 illustrate the resulting changes in age composition that are expected or that have occurred between 1970 and the year 2000. As Figure 3 shows, the baby bulge was at ages 5 to 15 in 1970, while in 1985 it will be between 20 to 30 and by the year 2000 it will be between the ages of 35 to 45. Similarly, the impact of the birth decline is seen as hitting the public schools in the late 70s to 1985, the colleges from around 1985 on and as affecting all levels, other than continuing education for adults, by the year 2000.

The implications of these findings for basic and higher education will be explored in more detail in later portions of this publication which deal with basic and higher education specifically.

Projected Population Changes by County

As might be expected, changes in population vary from region to region and county to county due to differences in age composition and economic growth or decline. The counties differ with regard to the number of births, the number of deaths and the degree and direction of the net migration that occurs in response to economic growth or decline.

Table 6 indicates the projections of the Division of Research (Senier, 1978) for the 67 counties based upon current information regarding net migration and birth rates as applied to the 1970 census figures. Figure 5 indicates those counties that will gain in population by more than 10 percent between 1975 and the year 2000 and those that will lose more than 10 percent of their population by the year 2000. By contrast, Figure 6 reflects a detailed picture of recent growth in Pennsylvania's counties during the period of 1970 to 1976 in which Pennsylvania's population as a whole is estimated to have increased by only 0.5 percent. Information just received from the U.S. Bureau of Census indicates a slight decline in total Pennsylvania population between 1970 and 1977.

Net Migration

As can be seen in Table 7 and Figure 7, Pennsylvania has continued in the seventies to have a net migration loss but this pattern of more out than in was not uniform across all regions or from county to county.

Obviously, these migration patterns are a function of the degree to which gainful employment or satisfactory living conditions are found in a given area or county.

Table 8 and Figures 8 and 9 indicate by county the distribution of median income and of families living in poverty in 1970 (census). As can be seen, the degree of poverty or income only roughly correlated with net out migration, but these figures do define the issue of poverty in these counties, with which the schools must deal.

Similarly, Figure 10 shows United States census estimates of the incidence of functional illiteracy, by county, in 1970. Here we see some relationship to net out-migration and poverty but by no means a one to one relationship. Again, these figures indicate the range of conditions with which the schools must deal.

Table 5

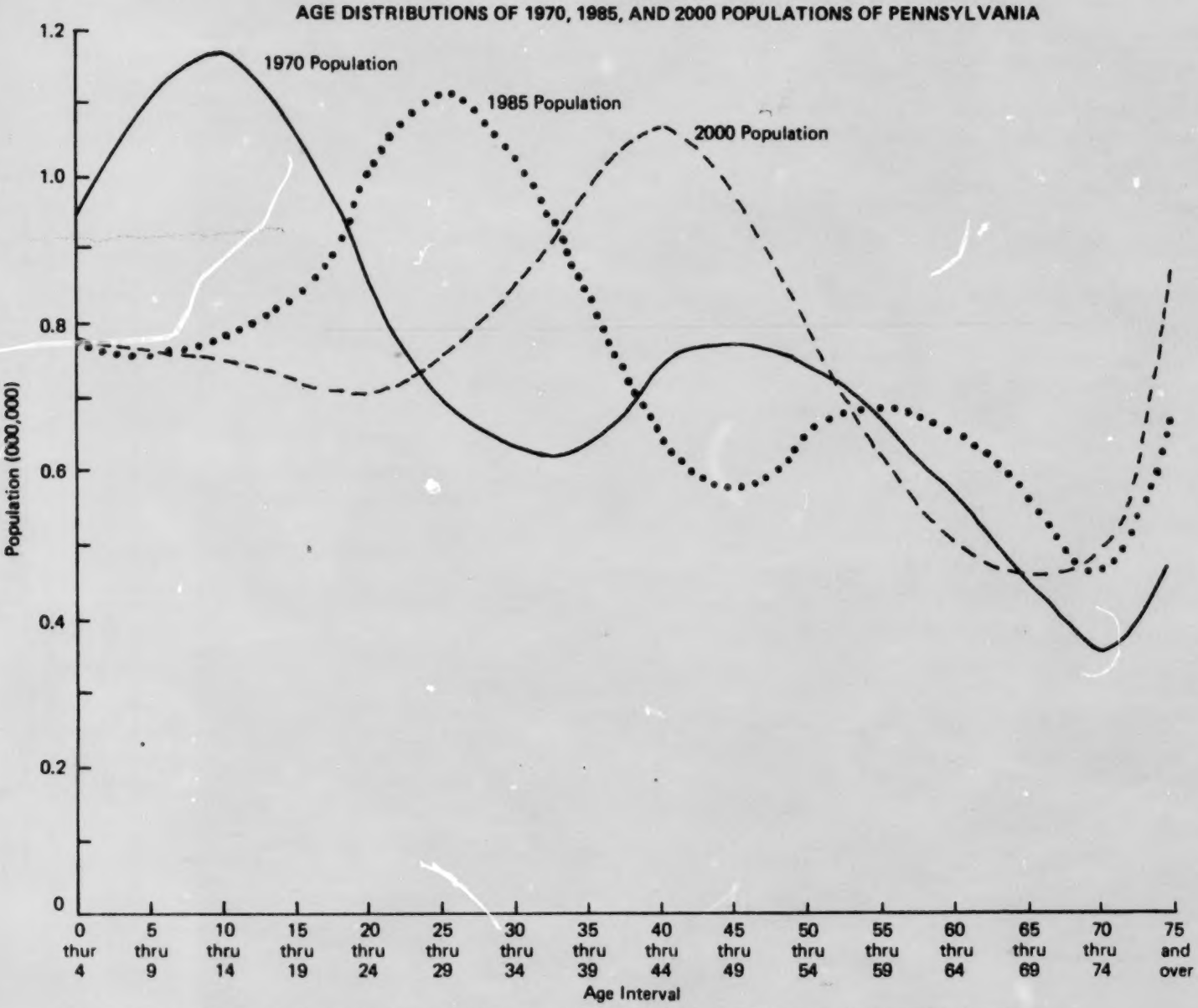
Projected Population for Pennsylvania in Thousands[1]

Age	Sex	1975	1980	1985	1990	1995	2000
0- 4	Male	422	391	394	403	401	390
	Female	425	374	377	385	384	372
	Total	826	765	771	788	786	762
5- 9	Male	465	409	385	382	397	389
	Female	444	396	365	369	376	376
	Total	908	806	750	752	773	766
10-14	Male	546	438	405	363	378	374
	Female	530	435	395	358	369	369
	Total	1,076	872	800	721	747	743
15-19	Male	560	530	412	393	341	367
	Female	563	515	427	384	451	358
	Total	1,123	1,044	839	777	692	725
20-24	Male	519	562	511	413	379	342
	Female	522	556	500	422	373	348
	Total	1,041	1,118	1,011	836	752	690
25-29	Male	396	512	563	504	414	374
	Female	452	518	550	496	418	371
	Total	848	1,031	1,113	1,000	831	745
30-34	Male	338	390	505	555	497	408
	Female	360	449	514	546	493	414
	Total	698	839	1,019	1,101	990	823
35-39	Male	289	333	385	497	548	489
	Female	314	356	445	509	542	487
	Total	603	689	830	1,006	1,090	977
40-44	Male	293	283	325	376	485	535
	Female	320	309	350	439	501	534
	Total	614	592	675	815	986	1,069
45-49	Male	347	286	276	317	368	473
	Female	381	315	305	344	433	493
	Total	728	601	581	661	800	965
50-54	Male	349	329	270	262	299	348
	Female	394	370	305	296	334	420
	Total	743	699	575	558	633	769
55-59	Male	333	328	312	254	248	281
	Female	377	380	360	295	288	322
	Total	709	709	671	549	536	604
60-64	Male	281	300	295	281	228	224
	Female	327	358	360	342	279	274
	Total	609	658	655	623	507	498
65-69	Male	222	244	257	256	241	198
	Female	279	309	333	339	317	263
	Total	500	552	590	595	558	461
70-74	Male	150	170	188	197	197	185
	Female	216	242	270	289	298	276
	Total	366	412	458	486	495	461
Over 75	Male	209	224	247	273	293	304
	Female	347	388	434	485	531	364
	Total	556	612	682	758	824	869
ALL	Male	5,721	5,730	5,730	5,727	5,715	5,681
	Female	6,228	6,270	6,292	6,300	6,286	6,243
	TOTAL	11,949	12,000	12,022	12,027	12,001	11,924

[1]Male and female may not add to total due to rounding.

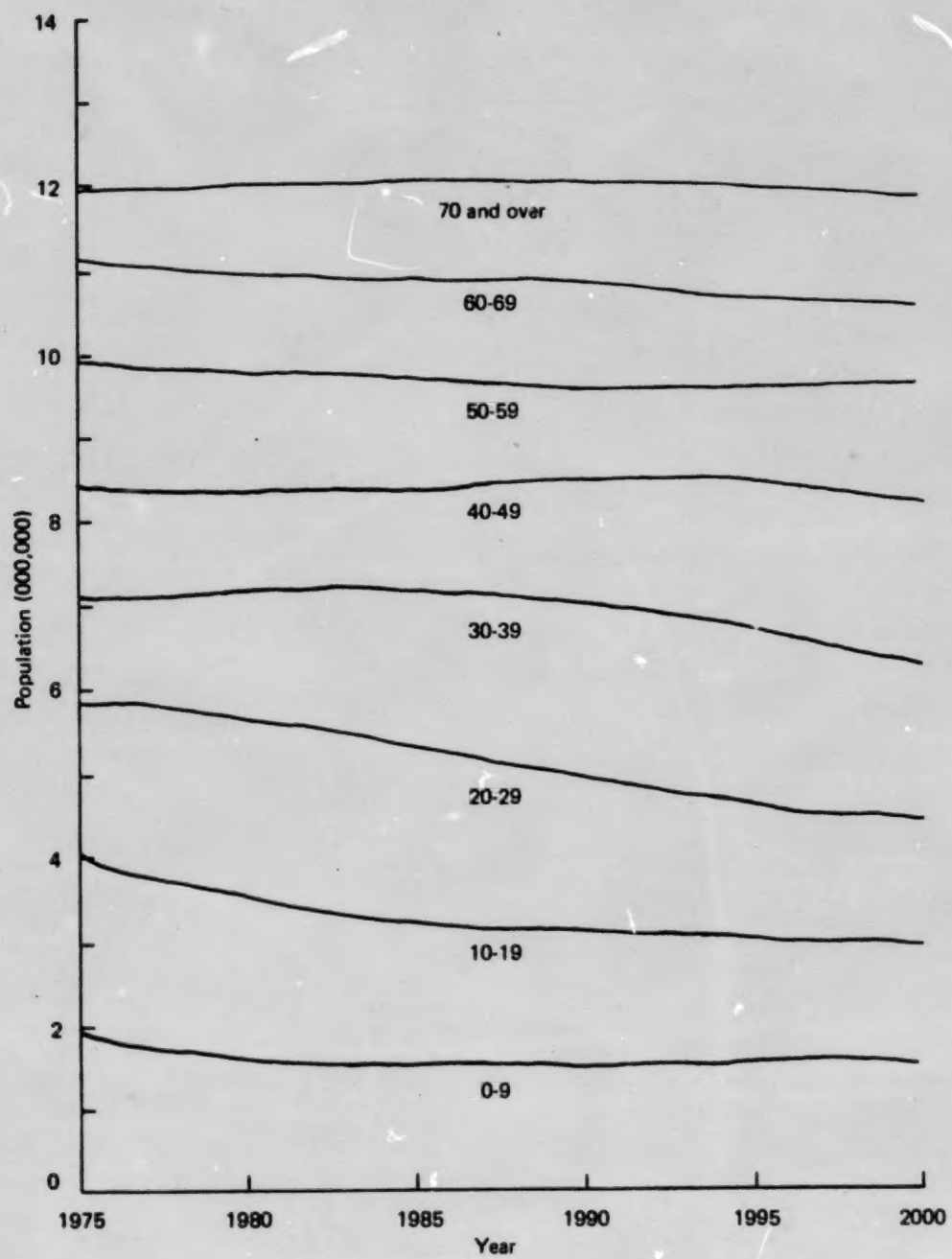
Source: John Senier of the Division of Research, Bureau of Information Systems, Pennsylvania Department of Education (a 1978 update of his publication Population Projections for Pennsylvania and Counties 1970-2000).

FIGURE 3
AGE DISTRIBUTIONS OF 1970, 1985, AND 2000 POPULATIONS OF PENNSYLVANIA



Source: Newton, Robert D., *Pennsylvania's Population: Prospective Changes For the Balance of the Twentieth Century.* Office of Budget and Planning, The Pennsylvania State University, March 1978

FIGURE 4
AGE COMPOSITION OF PROJECTED POPULATION OF PENNSYLVANIA



Source: Newton, Robert D., *Pennsylvania Population: Prospective Changes For the Balance of the Twentieth Century.* Office of Budget and Planning, The Pennsylvania State University, March 1978

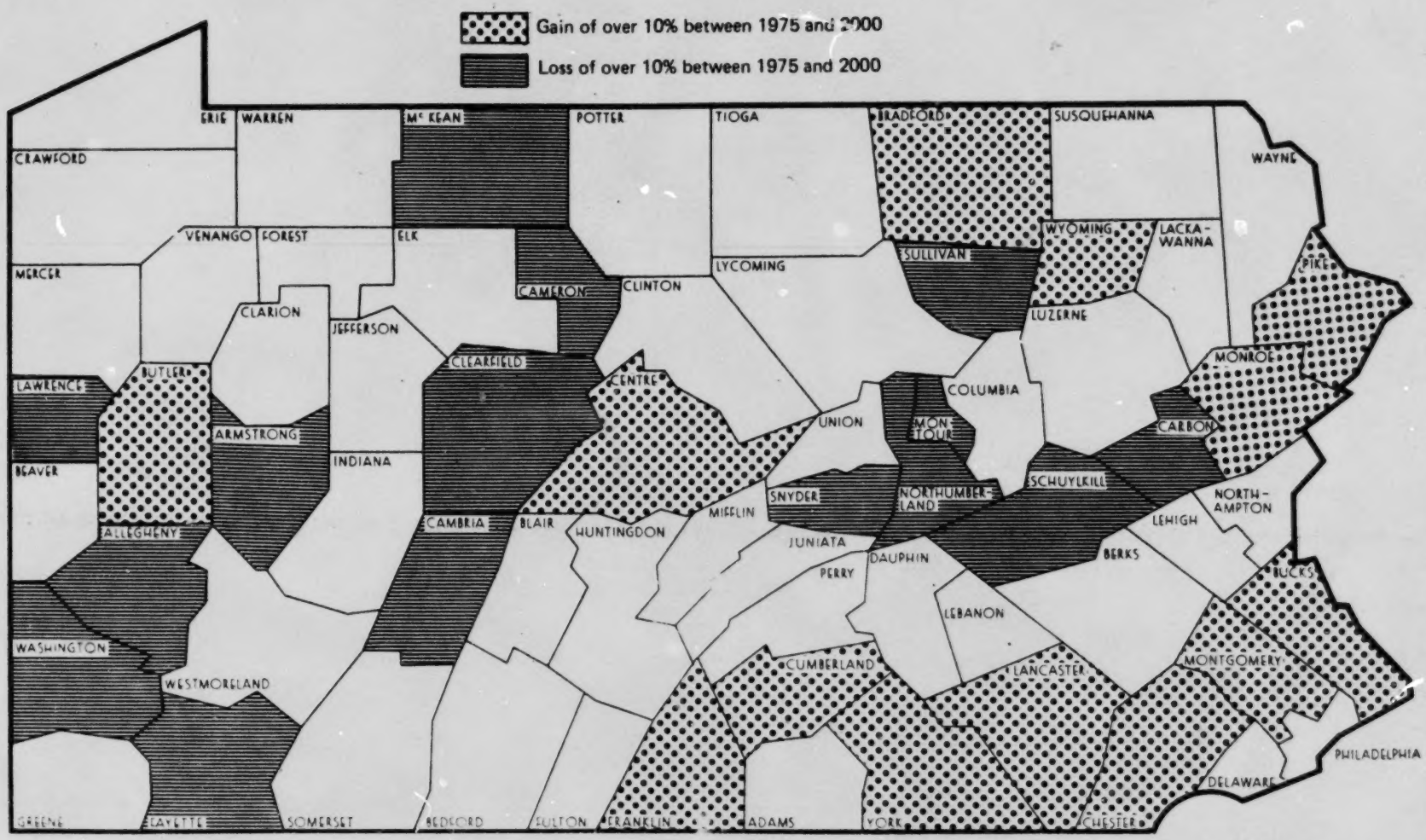
Table 6

Projected Population for Pennsylvania by County in Thousands*

County	1975	1980	1985	1990	1995	2000
Adams	58	59	60	60	61	61
Allegheny	1,594	1,567	1,530	1,491	1,445	1,395
Armstrong	75	74	72	70	68	65
Beaver	209	207	205	202	199	194
Bedford	43	42	42	41	41	40
Berks	301	303	305	306	306	305
Blair	135	135	134	133	132	130
Bradford	59	61	62	63	64	66
Bucks	452	490	531	568	608	640
Butler	132	135	139	142	145	148
Cambria	184	180	175	171	166	161
Cameron	7	7	7	7	6	6
Carbon	50	49	48	47	46	44
Centre	105	109	115	118	121	123
Chester	300	319	340	360	382	400
Clarion	39	39	39	39	39	39
Clearfield	74	73	71	70	68	66
Clinton	38	38	38	37	37	36
Columbia	56	56	56	55	55	54
Crawford	83	84	85	86	87	87
Cumberland	168	176	185	193	202	208
Dauphin	226	227	226	225	224	222
Delaware	610	614	615	614	611	605
Elk	38	38	38	38	38	37
Erie	270	275	280	283	287	289
Fayette	153	149	144	139	133	127
Forest	5	5	5	5	5	5
Franklin	105	108	110	113	115	116
Fulton	11	11	11	12	12	12
Greene	36	35	35	34	34	34
Huntingdon	40	40	40	40	39	39
Indiana	81	82	83	84	85	85
Jefferson	43	42	42	41	41	40
Juniata	17	17	18	18	18	18
Lackawanna	234	231	228	224	219	214
Lancaster	333	345	357	369	381	392
Lawrence	106	104	102	100	97	94
Lebanon	103	105	106	107	108	109
Lehigh	262	267	271	274	276	277
Luzerne	341	336	330	322	315	307
Lycoming	115	116	116	116	116	116
McKean	52	51	49	48	47	46
Mercer	127	126	125	124	122	120
Mifflin	46	46	46	46	46	46
Monroe	47	48	51	52	54	56
Montgomery	649	668	688	704	720	730
Montour	16	16	16	15	15	14
Northampton	217	218	218	218	217	215
Northumberland	99	97	95	92	90	87
Perry	30	30	31	32	33	33
Philadelphia	1,955	1,938	1,910	1,880	1,843	1,805
Pike	13	13	14	15	16	16
Potter	17	17	16	16	16	16
Schuylkill	158	154	149	144	138	133
Snyder	30	31	32	33	34	35
Somerset	76	76	75	75	74	73
Sullivan	6	6	6	6	6	5
Susquehanna	35	36	36	37	38	38
Tioga	41	41	42	42	42	43
Union	30	30	31	31	32	32
Venango	62	62	62	61	61	60
Warren	48	49	49	49	49	49
Washington	210	208	204	200	196	190
Wayne	30	30	31	31	32	32
Westmoreland	382	385	386	386	385	381
Wyoming	20	21	22	24	26	27
York	283	290	297	303	308	312
TOTAL	11,949	12,000	12,022	12,027	12,001	11,924

*Senier, 1978 (an update of projections found in Population Projections for Pennsylvania and Counties 1970-2000).

FIGURE 5
CHANGE IN DISTRIBUTION OF PROJECTED POPULATION OF PENNSYLVANIA



Source: Newton, Robert D., *Pennsylvania's Population: Prospective Changes for the Balance of the Twentieth Century*, Office of Budget and Planning, Pennsylvania State University, March 1978

FIGURE 6
1970-1976 PENNSYLVANIA PERCENTAGE INCREASE IN POPULATION BY COUNTY[1]

Key

% Increase
15% up
10-14%
5-9%
0-4%
(-)0.1–(-)7%

[1] Pennsylvania's population increased by only 0.5% from April 1, 1970 (Census) to July 1, 1976 (Provisional), i.e., by 61,000.

Source: Social and Economic Characteristics, Bureau of the Census PC (1) (C40)

Table 7

Estimated Net Migration of Pennsylvania Counties From 1970 to 1977[1]

County	April 1, 1970 Census	July 1, 1977 (Provisional)	1970-77 Change	1970-77 Percentage Change	Net Migration
Pennsylvania	11,800,766	11,785,000	-16,000	-0.1	-286,000
Adams	56,937	62,800	5,900	10.3	3,300
Allegheny	1,605,133	1,493,600	-111,500	-6.9	-120,500
Armstrong	75,590	75,400	-200	-0.2	-1,800
Beaver	208,418	207,400	-1,000	-0.5	-6,400
Bedford	42,353	43,000	700	1.5	-1,100
Berks	296,382	302,100	5,700	1.9	1,100
Blair	135,356	134,200	-1,100	-0.8	-3,300
Bradford	57,962	60,700	2,700	4.7	-200
Bucks	416,728	468,400	51,700	12.4	26,000
Butler	127,941	141,200	13,300	10.4	8,000
Cambria	186,785	187,800	1,000	0.6	-3,100
Cameron	7,096	6,800	-300	-3.6	-500
Carbon	50,573	52,200	1,700	3.3	1,600
Centre	99,267	109,700	10,500	10.5	4,900
Chester	277,746	298,200	20,400	7.3	7,500
Clarion	38,414	41,600	3,200	8.4	1,800
Clearfield	74,619	78,900	4,300	5.7	2,200
Clinton	37,721	37,600	-200	-0.4	-1,200
Columbia	55,114	59,400	4,300	7.7	3,400
Crawford	81,342	85,200	3,900	4.7	1,000
Cumberland	158,177	171,900	13,700	8.7	7,400
Dauphin	223,713	223,500	-200	-0.1	-6,000
Delaware	603,456	583,700	-19,700	-3.3	-31,700
Elk	37,770	36,400	-1,300	-3.5	-2,900
Erie	263,654	271,600	8,000	3.0	-5,300
Fayette	154,667	156,400	1,700	1.1	-600
Forest	4,926	5,300	400	7.9	400
Franklin	100,833	106,200	5,400	5.3	600
Fulton	10,776	11,600	800	7.5	200
Greene	36,090	39,100	3,100	8.5	2,300
Huntingdon	39,108	39,800	700	1.7	-700
Indiana	79,451	87,000	7,600	9.5	4,500
Jefferson	43,695	47,200	3,500	8.0	2,800
Juniata	16,712	18,300	1,600	9.6	900
Lackawanna	234,504	232,400	-2,100	-0.9	-600
Lancaster	320,079	347,900	27,800	8.7	11,200
Lawrence	107,374	106,400	-1,000	-1.0	-2,800
Lebanon	99,665	104,800	5,200	5.2	1,100
Lehigh	255,304	263,600	8,300	3.3	2,900
Luzerne	341,956	338,600	-3,300	-1.0	-800

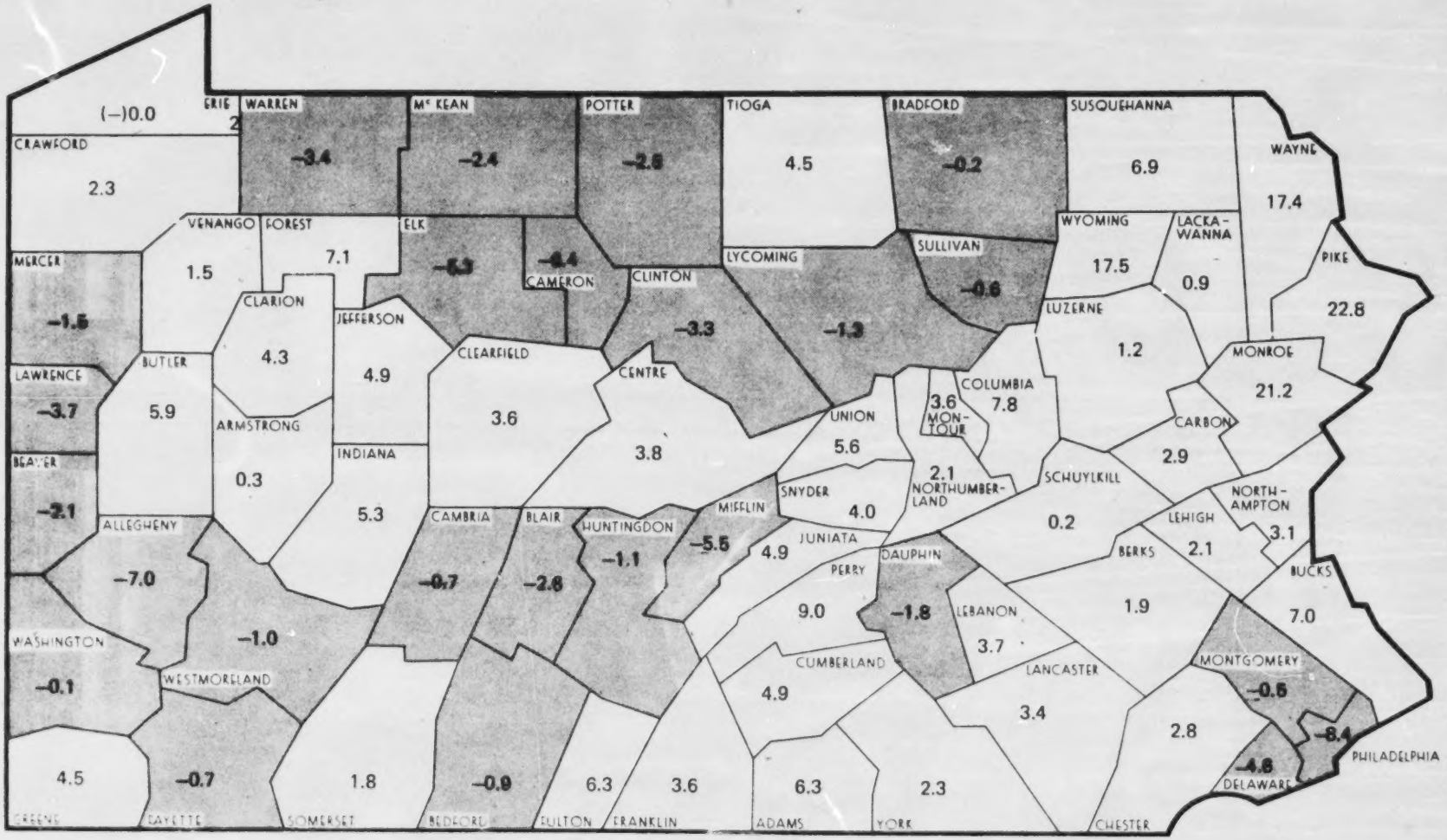
Table 7 (continued)

County	April 1, 1970 Census	July 1, 1977 (Provisional)	1970-77 Change	1970-77 Percentage Change	Net Migration
Lycoming	113,296	113,200	-100	-0.1	-4,100
McKean	51,915	52,000	100	0.2	-1,100
Mercer	127,225	126,500	-700	-0.6	-3,900
Mifflin	45,268	44,500	-800	-1.8	-2,500
Monroe	45,422	57,700	12,300	27.0	11,300
Montgomery	624,080	628,200	4,200	0.7	-9,200
Montour	16,508	16,600	100	0.8	-100
Northampton	214,545	225,700	11,100	5.2	7,400
Northumberland	99,190	98,800	-400	-0.4	-800
Perry	28,615	33,500	4,900	17.0	3,400
Philadelphia	1,949,996	1,784,500	-165,500	-8.5	-200,500
Pike	11,818	14,300	2,500	20.9	2,500
Potter	16,395	16,800	400	2.3	-300
Schuylkill	160,089	157,600	-2,500	-1.6	-1,000
Snyder	29,269	31,100	1,900	6.4	500
Somerset	76,037	79,900	3,800	5.0	1,800
Sullivan	5,961	6,000	(Z)	0.1	(Z)
Susquehanna	34,344	37,100	2,800	8.1	1,400
Tioga	39,691	41,200	1,500	3.8	(Z)
Union	28,603	30.900	2,300	7.9	1,300
Venango	62,353	63,200	800	1.3	-700
Warren	47,682	46,900	-800	-1.7	-2,100
Washington	210,876	213,600	2,700	1.3	-1,300
Wayne	29,581	34,100	4,600	15.4	3,900
Westmoreland	376,935	379,900	2,900	0.8	-6,400
Wyoming	19,092	24,400	5,300	27.7	3,900
York	272,603	289,000	16,400	6.0	5,200

[1]Population Estimates U.S. Bureau of Census, Series P-26, No. 77-38, December 1978, Table 1, p. 3.

[Z]Less than 50 persons or less than 0.05 percent.

FIGURE 7
1970-1976 PENNSYLVANIA NET (PERCENTAGE) MIGRATION RATES BY COUNTY[1]



[1]Pennsylvania as of 1976 had a net out migration of –1.5% of the 1970 census population.

[2]Erie had a slight negative net migration of 100 people leaving the county.

Source: Social and Economic Characteristics, Bureau of the Census PC (1) (C40)

Net Loss
Net Gain

Table 8

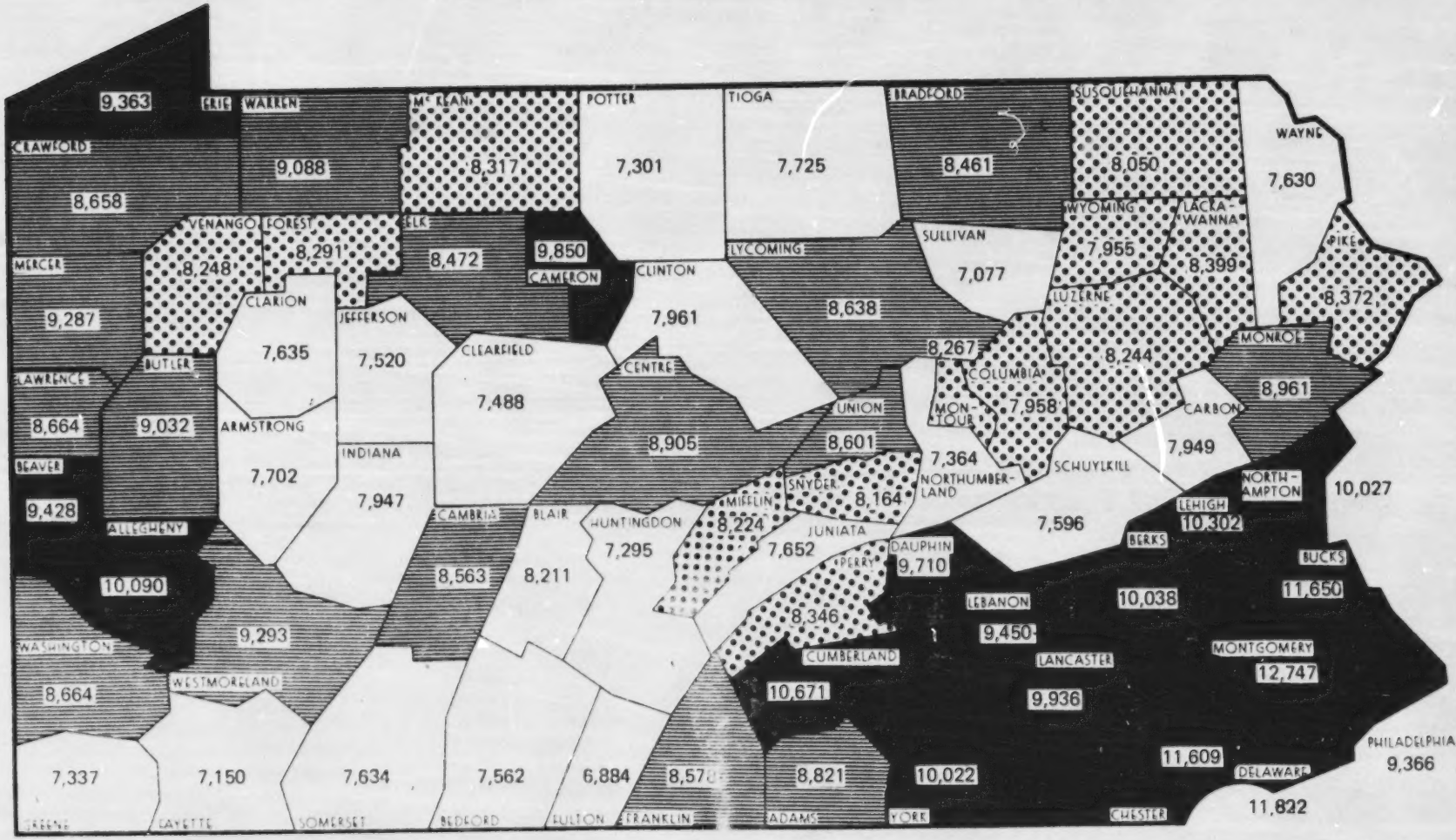
Number of Poor Families as a Percent of Total Families in Pennsylvania, by County, 1970

County	Total No. Families	Families in Poverty[1] No.	% of Total	County	Total No. Families	Families in Poverty No.	% of Total
Adams	14,339	1,103	7.7	Lackawanna	61,481	4,798	7.8
Allegheny	411,172	29,026	7.1	Lancaster	81,480	5,288	6.5
Armstrong	20,250	2,231	11.0	Lawrence	27,915	2,624	9.4
Beaver	54,912	3,943	7.2	Lebanon	25,915	1,191	4.6
Bedford	11,342	1,412	12.4	Lehigh	67,859	3,277	4.8
Berks	78,396	3,929	5.0	Luzerne	90,642	8,089	8.9
Blair	35,333	2,967	8.4	Lycoming	29,216	2,377	8.1
Bradford	14,581	1,525	10.5	McKean	13,783	1,246	9.0
Bucks	103,847	4,250	4.1	Mercer	32,203	2,450	7.6
Butler	32,012	2,754	8.6	Mifflin	12,237	1,140	9.3
Cambria	46,436	4,197	9.0	Monroe	11,940	882	7.4
Cameron	1.867	118	6.3	Montgomery	159,372	5,251	3.3
Carbon	13,720	1,019	7.4	Montour	3,599	369	10.3
Centre	21,350	1,943	9.1	Northampton	56,240	3,150	5.6
Chester	66,952	3,021	4.5	Northumberland	27,095	2,788	10.3
Clarion	9,480	1,311	13.8	Perry	7,399	717	9.7
Clearfield	19,441	2,676	13.8	Philadelphia	479,265	53,705	11.2
Clinton	9.649	851	8.8	Pike	3,302	239	7.2
Columbia	14,618	1,169	8.0	Potter	4,279	571	13.3
Crawford	20,855	2,127	10.2	Schuylkill	43,001	4,693	10.9
Cumberland	40,577	1,763	4.3	Synder	6,967	653	9.4
Dauphin	58,201	4,477	7.7	Somerset	19,981	2,226	11.1
Delaware	151,969	7,034	4.6	Sullivan	1,514	234	15.5
Elk	9,445	701	7.4	Susquehanna	8,942	1,077	12.0
Erie	65,024	4,420	6.8	Tioga	9,774	1,223	12.5
Fayette	40,714	6,813	16.7	Union	6,278	523	8.3
Forest	1,340	110	8.2	Venango	15,345	1,628	10.6
Franklin	26,260	2,103	8.0	Warren	11,990	822	6.9
Fulton	2,943	448	15.2	Washington	55,776	5,344	9.6
Greene	9,464	1,682	17.8	Wayne	7,514	860	11.4
Huntingdon	9.785	1,256	12.8	Westmoreland	99,572	6,470	6.5
Indiana	18,745	2,202	11.7	Wyoming	4,993	571	11.4
Jefferson	11.745	1,375	11.7	York	73,118	4,070	5.6
Juniata	4,370	491	11.2				
				THE STATE	3,011,130	236,993	7.9

Source: General Social and Economic Characteristics, PC(1)-C40, Bureau of the Census, 1970, Table 124.

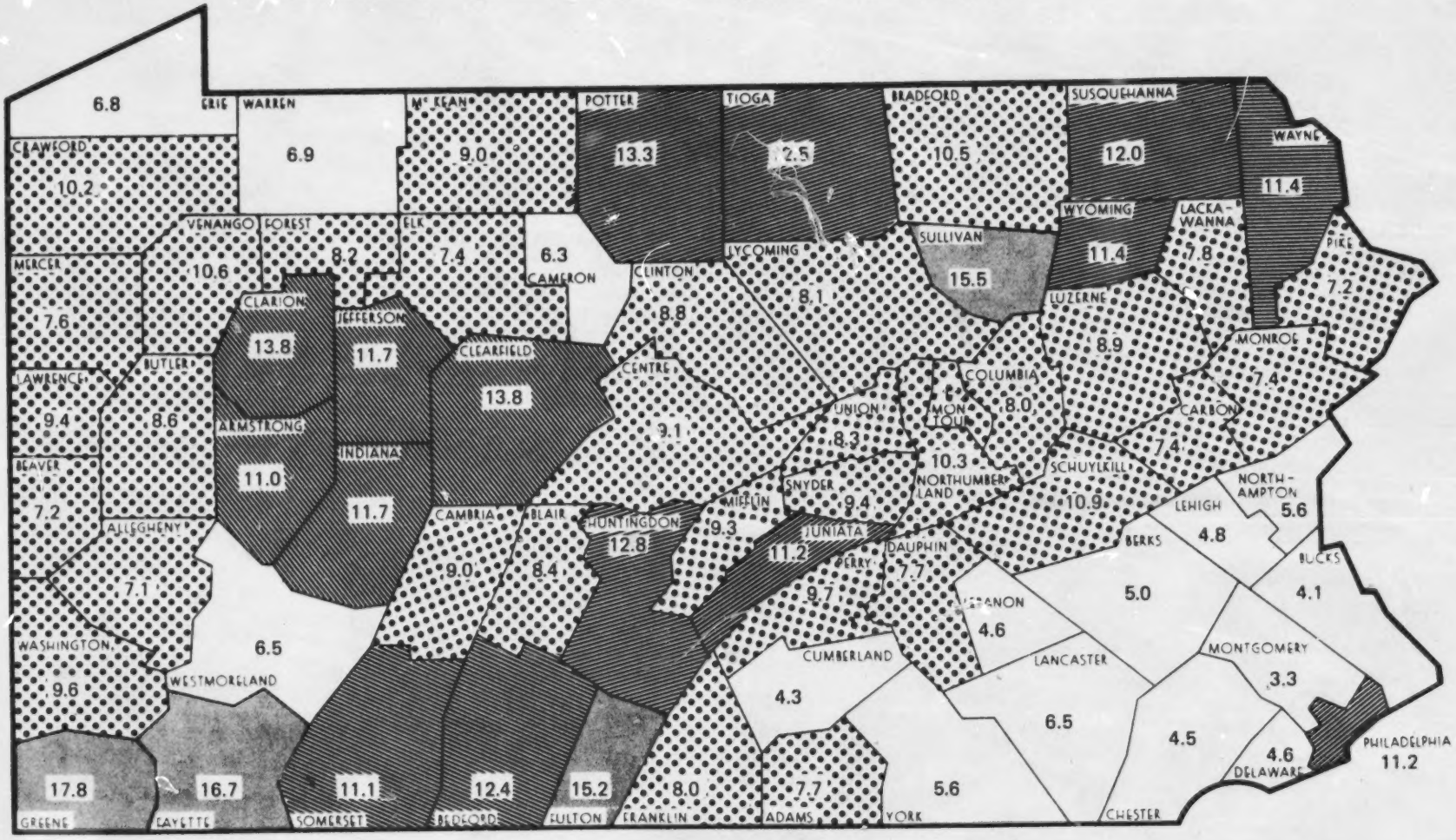
[1]Poverty defined on basis of income cutoffs adjusted for family size, sex of family head, number of children under 18 and farm or nonfarm residence. For example, the poverty cutoff for a nonfarm family of four headed by a male was $3,745 in 1970.

FIGURE 8
MEDIAN FAMILY INCOME BY COUNTY, PENNSYLVANIA, 1970



Source: Social and Economic Characteristics, Bureau of the Census PC (1)-C40.

FIGURE 9
PERCENTAGE OF FAMILIES IN POVERTY AS OF 1970 BY PENNSYLVANIA COUNTY[1]



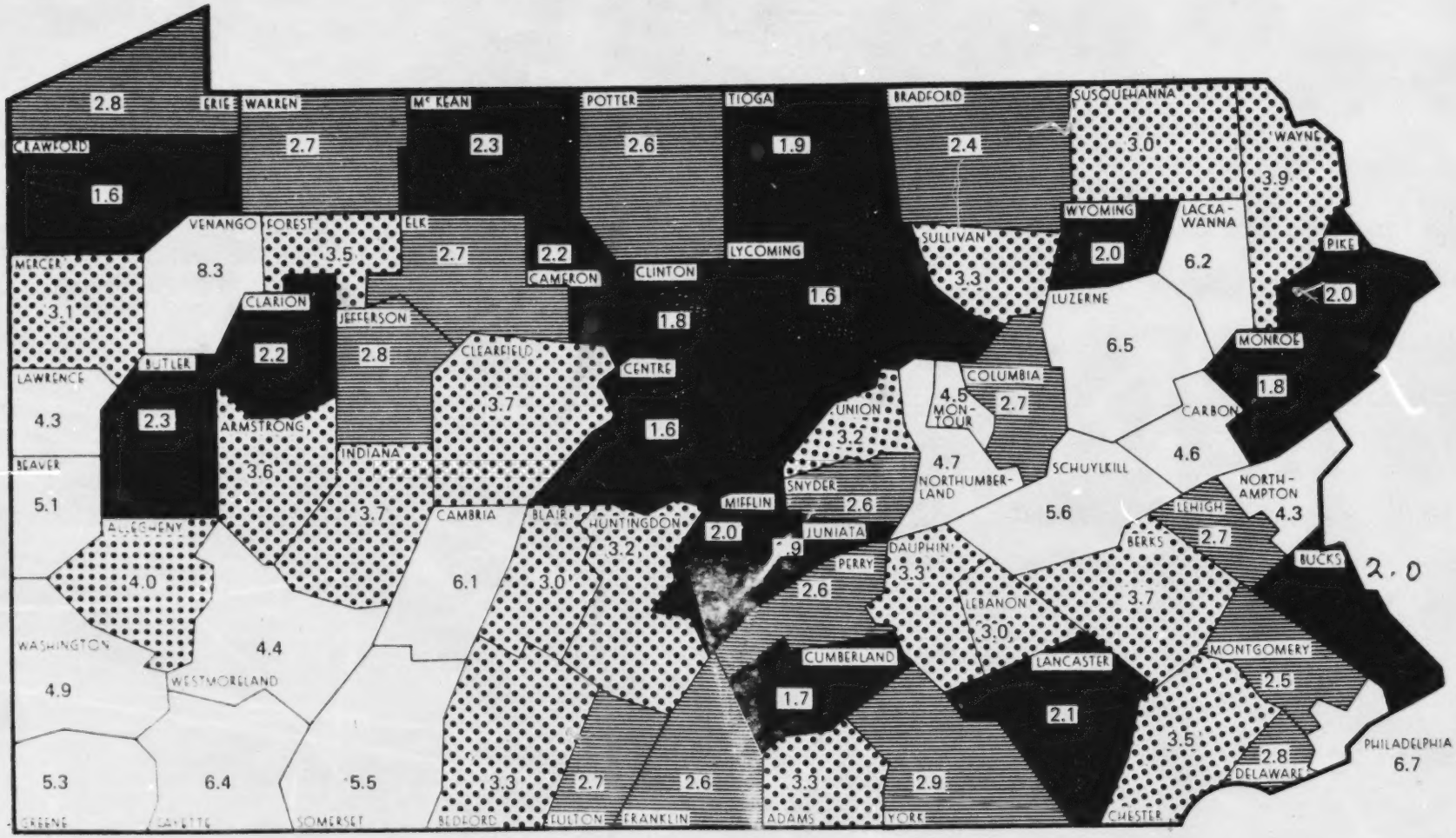
* Montour County 10.3%

[1]The percentage for Pennsylvania as a whole was 7.9%

15 - 18% | 11 - 14% | 7 - 10% | 3 - 6%

Source: Social and Economic Characteristics, Bureau of the Census PC (1) (C40)

FIGURE 10
FUNCTIONAL ILLITERACY AS A PERCENT OF TOTAL POPULATION 25 YEARS OLD AND OVER BY COUNTY, PENNSYLVANIA, 1970



1.6% - 2.3% | 2.4% - 2.9% | 3.0% - 4.2% | 4.3% - 8.3%

THE STATE - 4.2%

Functional illiteracy is measured by the number of persons 25 years of age and over who have completed less than 5 years of school.

Source: Social and Economic Characteristics, Bureau of the Census, PC (1)-C40, Pennsylvania, 1970

Figure 11, in addition, shows the 1977 average annual reemployment rate for the 67 counties in comparison with a 7.7 percent figure for Pennsylvania as a whole and 7.0 percent for the nation. These figures match to some degree the 1970 figures for net migration, etc., with regard to a general regional pattern but, as usual, individual counties may have apparently contradictory findings.

A case in point is that of Wyoming County. It had a very high percentage population increase between 1970 and 1976 (Figure 6), a very high net migration rate of +17.5 percent (Figure 7), a relatively low median income (Figure 8), a relatively high proportion of families living in poverty (Figure 9), a high annual unemployment rate in 1977 (Figure 11); but the county also had a low incidence of functional illiteracy (Figure 10), and a relatively high rate of school completion (Figure 12).

Wyoming county has recently experienced an influx of new industry providing employment for individuals with skills not typically found in Wyoming's relatively older rural population, thus requiring an influx of skilled labor. The poverty level and unemployment rates would, therefore, remain high despite the creation of new employment opportunities. Wyoming's population may also be growing due to an increase of commuters who work elsewhere but who choose to live in this area of great scenic beauty.

Projected Employment Growth in Pennsylvania

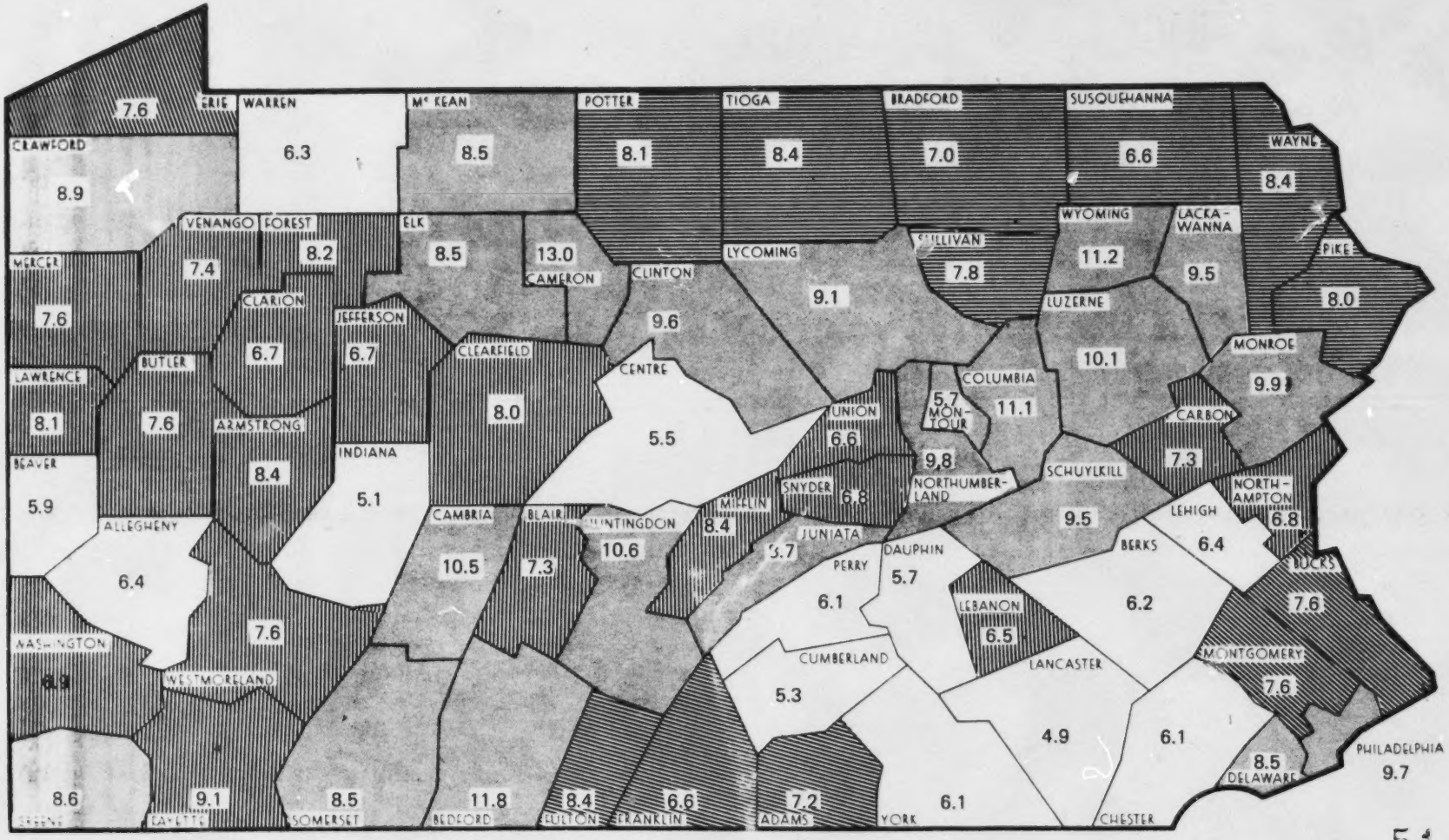
Table 9 indicates the 20 occupations in Pennsylvania that will experience the greatest growth between 1974 and 1985, according to the analysts of the Bureau of Employment Security of the Pennsylvania Department of Labor and Industry. The projected number of job openings, broken down by demand due to separations (death, retirement, etc.) and growth, is shown according to the magnitude of demand. Twenty occupations with the greatest percentage increase are also listed in order of magnitude.

The occupations shown do not, of course, represent the range of possible occupations but they do indicate the kinds of positions that our young people are most likely to find open to them and, as such, they suggest what will be expected of our schools in the future. It might be noted that relatively few of these occupations are those traditionally requiring a college degree (bachelor's or higher). This is consistent with a projection by the federal government that only about 14 percent of the job openings for the foreseeable future will be those that now require a college degree. For example, according to the Pennsylvania labor analysts, there is currently a surplus of applicants for job openings in the following professional, technical and managerial occupations: architectural occupations, surveying occupations, occupations in dental technology, occupations in primary and kindergarten education, all occupations in art, all occupations in entertainment and recreation, all occupations in administrative specialities and all occupations in managerial work. Many of these do require a college degree.

Chapter Summary

Pennsylvania has been experiencing a marked decline in births since 1957 and will continue to have a birth rate well below the 1957 level. Not since the 1930s has Pennsylvania experienced anything resembling the current decline. The implications of this for enrollment in the public and private schools of basic education are clearly evident now and the potential impact of the decline in the 1980s and 1990s upon postsecondary enrollments is equally clear.

FIGURE 11
ESTIMATED ANNUAL AVERAGE UNEMPLOYMENT RATES BY COUNTY FOR 1977[1]



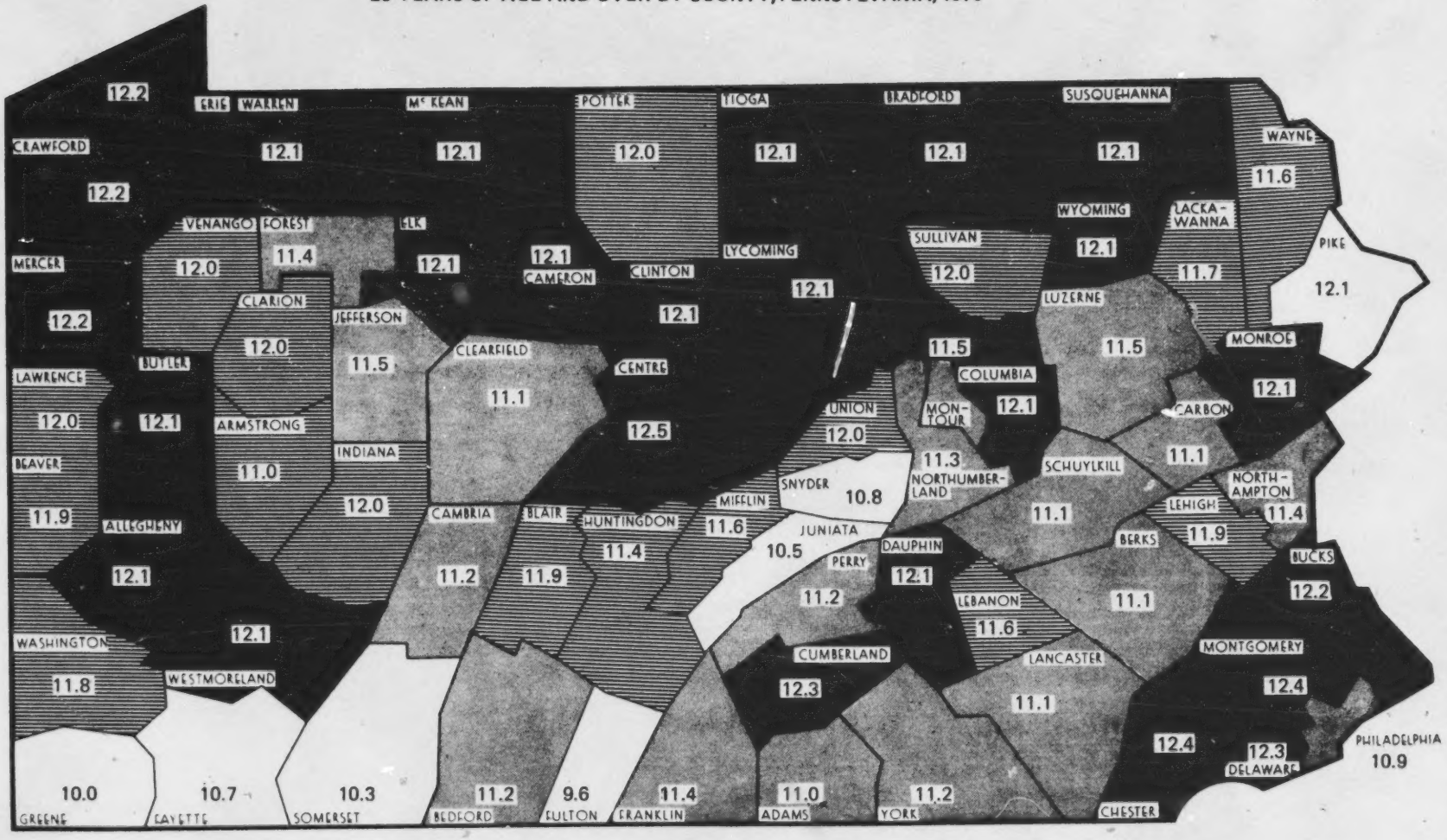
Pennsylvania - 7.7%
United States - 7.0%

[1] Cambria County rate affected by flood. The 1976 figure was 7.3%.

Source: Social and Economic Characteristics, Bureau of the Census PC (1) (C40)

8.5% and over 6.5% to 8.4% 4.5% to 6.4%

FIGURE 12
MEDIAN NUMBER OF SCHOOL YEARS COMPLETED BY PERSONS 25 YEARS OF AGE AND OVER BY COUNTY, PENNSYLVANIA, 1970



Source: Social and Economic Characteristics, Bureau of the Census PC (1)-C40, Pennsylvania, 1970

Table 9

Top Twenty Individual Occupations in Pennsylvania
By Total Job Openings and Percent Growth, 1974 to 1985[1]
(11-Year Cumulative Data)

By Total Job Openings				By Percent Growth		
Occupation	Total	Due to Growth	Due To Labor Force Separations	Occupation	Percent Growth	Total Job Openings
Secretaries, General	209,640	54,630	155,010	Dental Hygienists	200.8	3,760
Typists	69,070	10,580	58,490	Veterinarians	84.9	910
Sewers and Stitchers	61,380	- 2,640	64,020	Therapy Assistants	79.4	200
Bookkeepers	53,890	660	53,230	Health Record Technicians	75.6	1,410
Practical Nurses	50,580	19,830	30,750	Teachers Aides, (except monitors)	71.5	12,740
Waiters	47,090	5,220	41,870	Animal Caretakers, (except farm)	71.1	5,080
Elementary School Teachers	46,840	810	46,030	Data Processing Machine Repairers	69.7	2,290
Registered Nurses	45,200	9,360	35,840	Practical Nurses	64.3	50,580
Janitors and Sextons	44,650	6,580	38,070	Farm Laborers, Self-Employed	63.8	60
Cashiers	41,170	3,950	37,220	Therapists	63.0	7,890
Nurses Aides, Orderlies	40,190	13,300	26,890	Dentists	60.3	7,900
Assemblers*	32,160	7,310	24,850	Vocational, Educational Counselors	59.7	6,950
Cooks, (except private)	31,420	8,150	23,270	Secretaries, Legal	57.7	12,450
Packer, Wrapper (except meat), Produce	29,150	1,560	27,590	Dental Assistants	56.3	7,370
Carpenters and Apprentices	28,180	11,550	16,630	Asbestos, Insulation Workers	51.4	950
Hairdressers, Cosmetologists	25,360	2,880	22,480	Operations, Systems Research	51.3	4,640
Childcare Workers, (except private)	25,200	9,250	15,950	Childcare Workers, (except private)	51.2	25,200
Receptionists	23,970	5,310	18,660	Flight Attendants	50.2	800
Private Household Cleaners	22,030	- 170	22,200	Computer Systems Analysts	48.4	3,950
Guards	20,770	570	20,200	Welfare Service Aides	44.7	4,370
				Average All Occupations	10.7	xxx

*Excludes job openings created by the new Volkswagen assembly plant at New Stanton. Many of the estimated 5,000 new jobs at this plant wil be for assembly workers.

Note: Top 20 occupations comprise 35 percent of total job openings.

[1]Source: Pennsylvania Bureau of Employment Security Annual Planning Report for Fiscal Year 1979 (May 1978).

Not all school districts will be equally affected since despite an overall decline for the state as a whole, some areas are experiencing a positive net in-migration and/or population growth. School district administrators will have to assess carefully what is happening or likely to happen in their area regarding economic growth, migration, birth decline, etc., in order to make the decisions that must be made.

Demand for jobs is being exceeded by the supply available due to the marked increase in the working age population as a consequence of the baby boom between 1946 and 1957. The last of the baby boom children became 20 years old in 1977 and they are now or will soon be in the labor market.

Jobs, particularly those traditionally requiring college training, may be relatively scarce. Relatively few of all job openings are projected as being for the college trained but, currently, about 42 percent of our high school graduates are going on to postgraduate institutions. As pointed out in the chapter on the condition of higher education several factors could conceivably reduce the college participation rate. This, combined with the birth decline, could have a marked impact on higher education unless private industry increases the trend of upgrading educational requirements for positions that have not traditionally required a college degree.

Chapter II

THE CONDITIONS OF BASIC EDUCATION

This chapter gives some significant statistics and trends with regard to basic education in Pennsylvania. In doing so it will use graphs and charts wherever possible and tabular materials when they seem to be more appropriate in terms of bringing out significant patterns or trends of interest.

Births, Enrollments and Graduates

As was indicated in Chapter I, the number of births in any given period is the primary determiner of basic education enrollments with migration playing a secondary role.

Before looking at this in more detail, it seems worthwhile to look first at some data on the proportion of school districts of different sizes (enrollments) and data on the change over time in the number of schools and enrollments that has occurred in recent years. Figure 13, for example, shows the proportion (percentage) of schools in different categories of enrollment size. As can be seen, the typical school district in Pennsylvania tends to have enrollments of one to three thousand pupils, but it is also true that some districts have more than 12,000 pupils and some have less than 1,000 pupils.

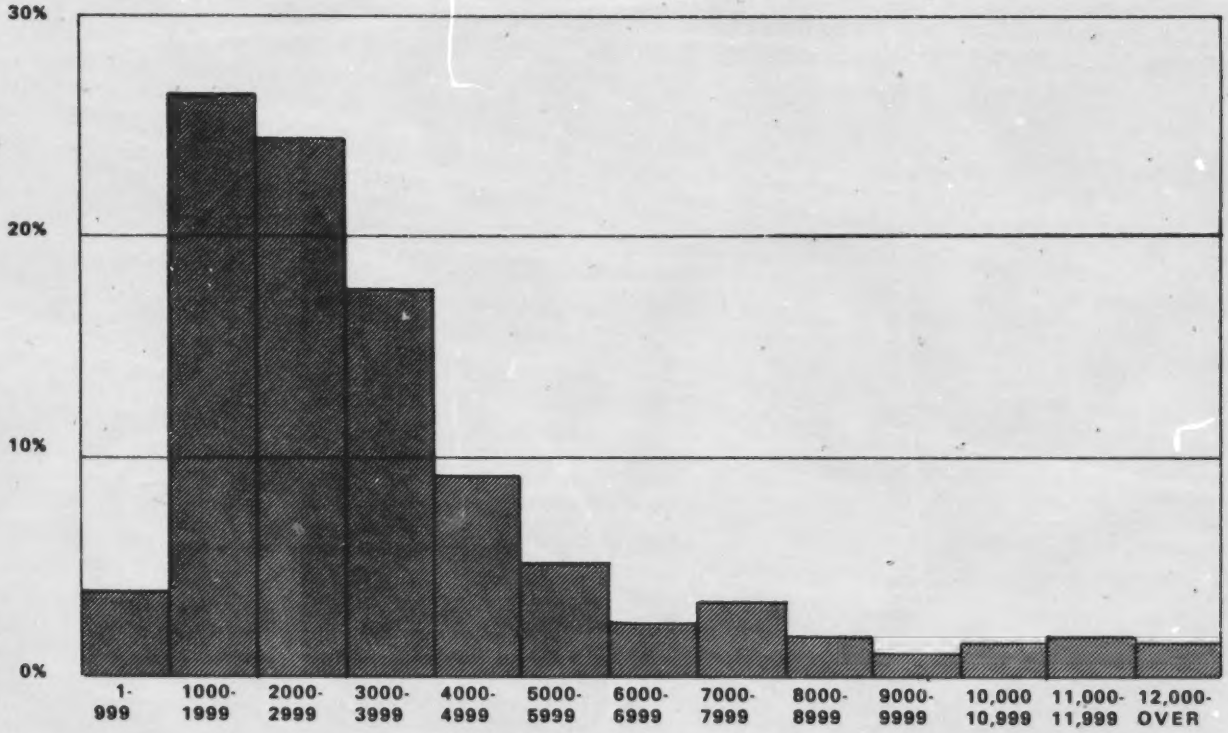
Figure 14 shows the changes in the number of elementary public schools and elementary public school enrollment from 1970-71 to 1977-78. Figure 15 does the same for public secondary schools and their enrollment.

Here we see that the number of elementary schools and enrolled pupils has been steadily dropping (birth decline, consolidation) while the secondary schools, in contrast, have, until fairly recently, been increasing in number despite some overall decline in enrollments. Obviously, the birth decline has yet to fully impact the secondary schools.

When we take all births that occur in a series of 13-year periods (the children who will later be in grades K through 12 in any given year) and compare these 13-year birth cohorts with the actual enrollments, we can readily see how strongly births determine enrollments and enrollment change over time. Figure 16 illustrates this very clearly and indicates, interestingly enough, that the congruence between births and enrollments has become very close in recent years. Apparently other factors, such as out-migration, were more significant in the period prior to the 1970s.

Another way of looking at the impact of demography is to project births and thus project the number of children of a given age for a given future year. Figure 17 indicates how the population of different age groups will change and, by implication, the impact on elementary, junior high and high school enrollments that is likely to occur between 1970 and the year 2000. It is apparent that a major drop in enrollments at every level either has already occurred or will occur in the next decade. In corroboration, Table 10 shows some projections made by the Division of Education Statistics of the Pennsylvania Department of Education based upon estimates of birth decline, dropout rates, etc., for both elementary and secondary schools.

FIGURE 13
DISTRIBUTION OF PENNSYLVANIA'S 504[a] SCHOOL DISTRICTS BY TOTAL ENROLLMENT
SHOWING THE PERCENT OF DISTRICTS IN EACH ENROLLMENT CATEGORY 1977-78

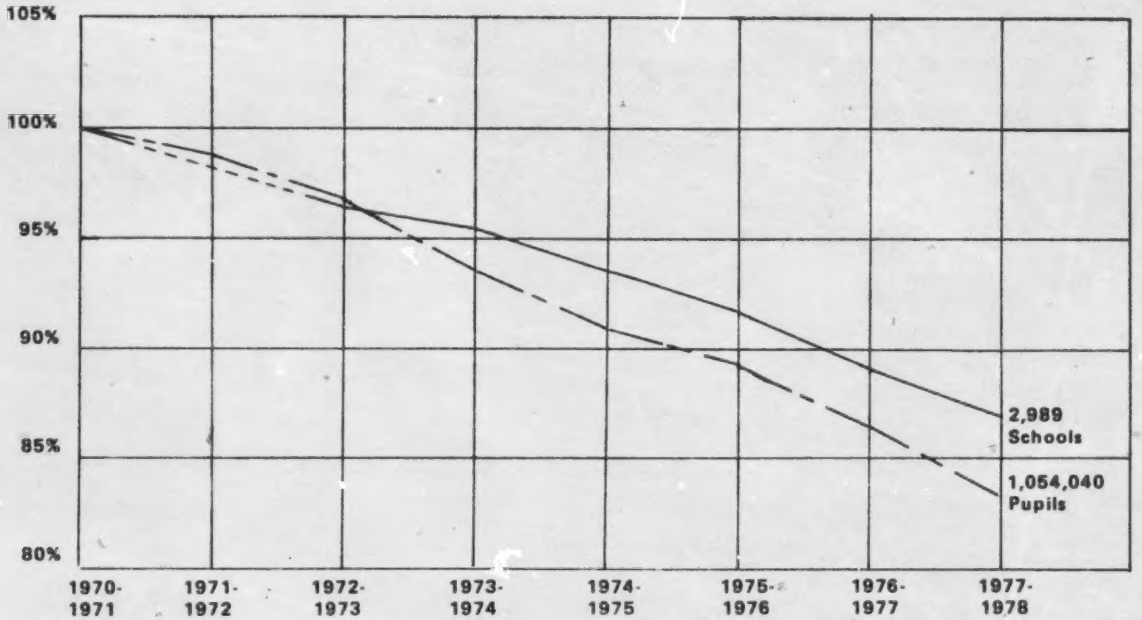


[a] Does not include Bryn Athyn School District which operates no public schools.

Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 14

NUMBER OF PUBLIC SCHOOLS HAVING ELEMENTARY ENROLLMENTS[a] AND PUBLIC ELEMENTARY ENROLLMENTS IN PENNSYLVANIA, 1970-71 THROUGH 1977-78 (SHOWN AS PERCENTAGES BASED ON 1970-71 FIGURES AS 100%)

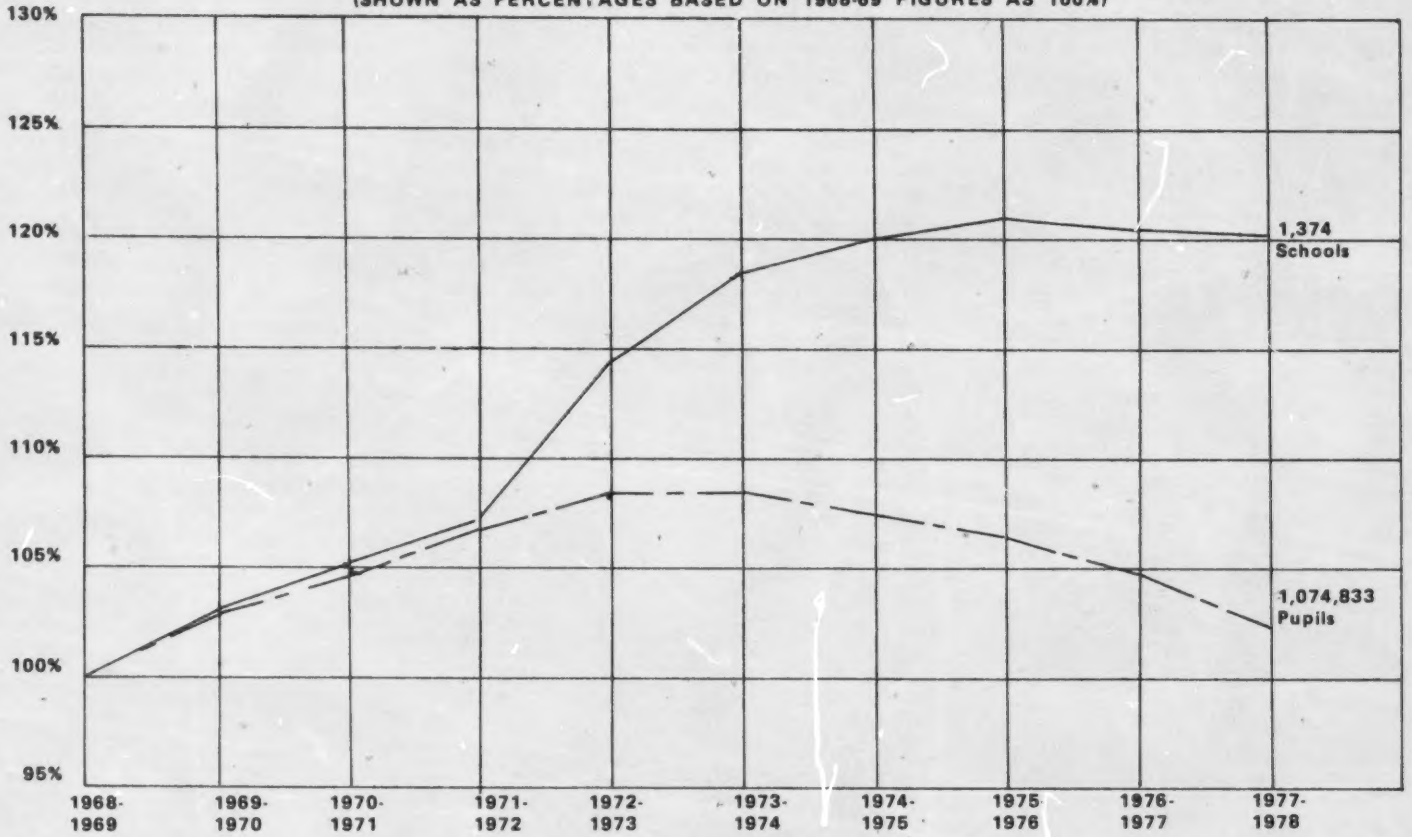


a Data applying to number of schools with elementary enrollments not available for 1971-72.

Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 15

NUMBER OF PUBLIC SCHOOLS HAVING SECONDARY ENROLLMENTS AND PUBLIC SECONDARY ENROLLMENTS IN PENNSYLVANIA, 1968-69 THROUGH 1977-78
(SHOWN AS PERCENTAGES BASED ON 1968-69 FIGURES AS 100%)

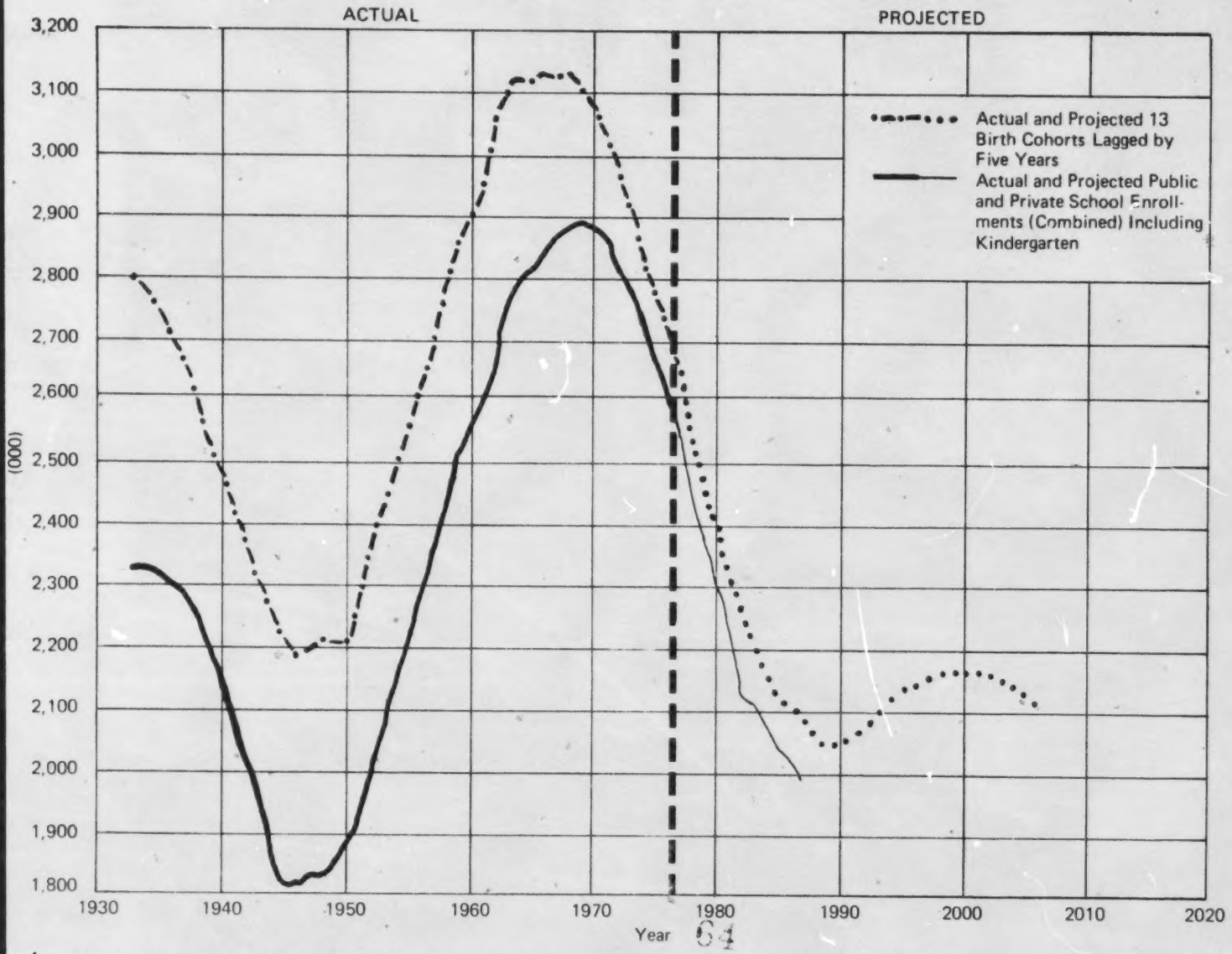


PUBLIC SCHOOLS HAVING SECONDARY ENROLLMENTS

PUBLIC SECONDARY ENROLLMENTS

Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 16
THE IMPACT ON ENROLLMENT OF DEMOGRAPHY IN THE FORM OF 13 YEAR COMBINED BIRTH COHORTS LAGGED FIVE YEARS[1]



[1]Data supplied by William Donny of the Division of Research, Bureau of Information Systems drawn or derived from population projections by age developed by John Senier of the Division of Research and from enrollment data and projections of the Division of Education Statistics.

FIGURE 17
PENNSYLVANIA POPULATION PROJECTIONS FOR AGE RANGE APPROXIMATELY PARALLEL TO LEVELS OF BASIC EDUCATION THROUGH SENIOR HIGH SCHOOL FOR THE YEARS 1980, 1990 AND 2000 COMPARED WITH THE BASE YEAR OF 1970[1]

[1]Interpolated from current five-year age interval data and projections provided by John Senier of the Bureau of Information Systems of the Pennsylvania Department of Education.

Table 10

Annual and Projected Fall Public and Private School Enrollments by Level 1968-1987[1]

Fall	Total	Elementary Schools[2]	Secondary Schools
1968	2,877,178	1,692,484	1,184,694
1969	2,887,971	1,676,448	1,211,523
1970	2,880,968	1,651,725	1,229,243
1971	2,857,492	1,609,392	1,248,100
1972	2,817,387	1,559,124	1,258,263
1973	2,765,432	1,504,833	1,260,599
1974	2,710,843	1,460,302	1,250,541
1975	2,674,116	1,435,488	1,238,628
1976	2,617,727	1,395,965	1,221,762
1977	2,545,576	1,351,013	1,194,563
	Projected		
1978	2,464,900	1,301,700	1,163,200
1979	2,382,800	1,258,200	1,124,600
1980	2,306,400	1,219,700	1,086,700
1981	2,230,900	1,182,500	1,048,400
1982	2,166,200	1,148,500	1,017,700
1983	2,113,400	1,122,400	991,000
1984	2,072,600	1,112,500	960,100
1985	2,040,700	1,113,700	927,000
1986	2,015,000	1,120,800	894,200
1987	1,991,800	1,132,700	859,100

[1]From Projections: Selected Education Statistics to 1987-88, Division of Education Statistics, Bureau of Information Systems, The Pennsylvania Department of Education, Harrisburg., Pa., 1978.

[2]Includes kindergarten.

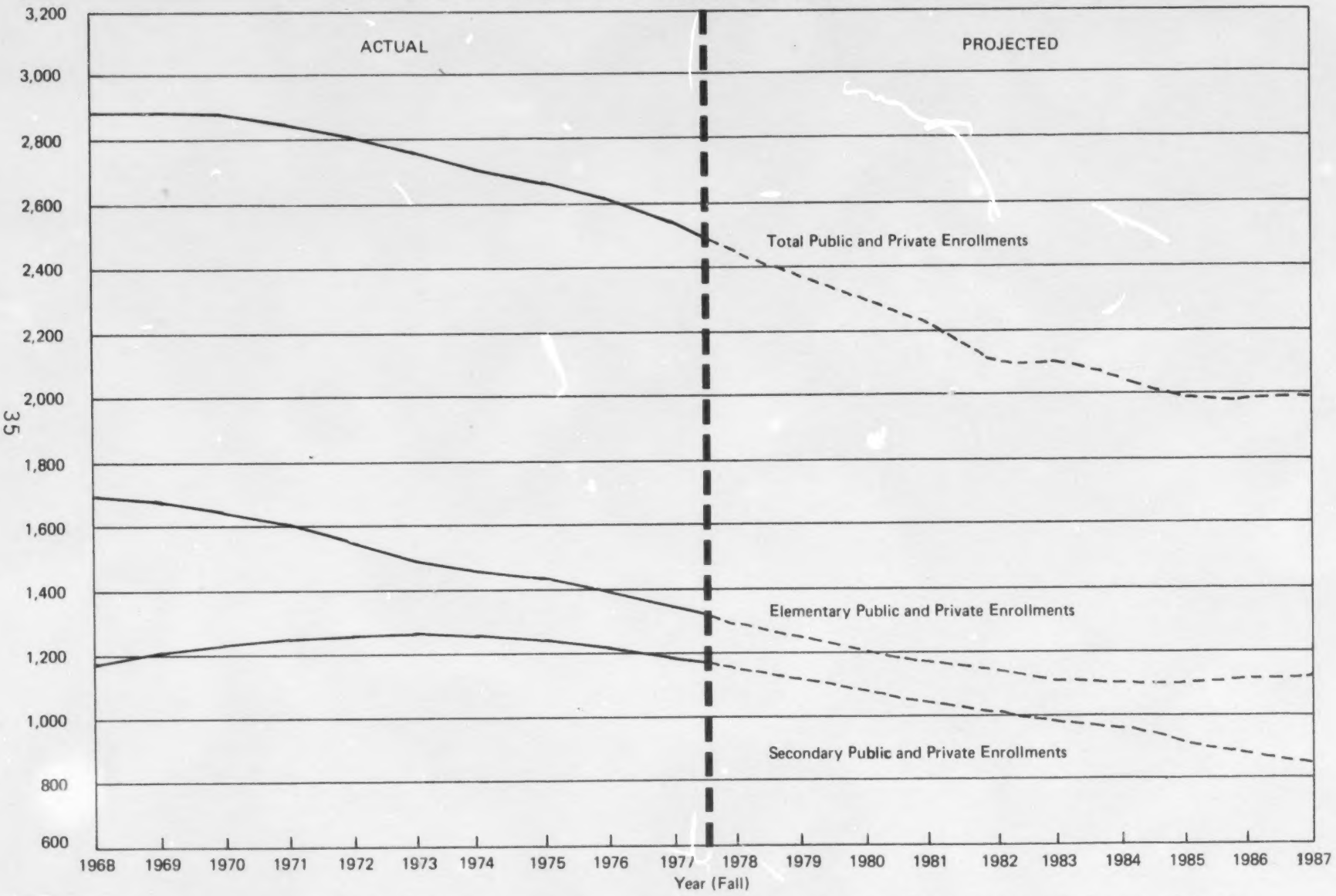
Nonpublic Enrollment

The nonpublic schools are a small but significant part of Pennsylvania's educational enterprise, and it may be appropriate at this point to look at them in some detail. Figure 18 shows the actual and projected growth of both the public and the nonpublic schools.

As can be seen in Figure 19, there has been a very large percentage increase in nonpublic kindergarten school enrollments since 1972-73 following a period of decline while the secondary and elementary enrollments have decreased relative to the year 1968-69. This increase in kindergarten enrollments is due to funding provided by the Legislature as of 1972-73, which sparked a marked increase in the number of nonpublic kindergarten schools.

FIGURE 18

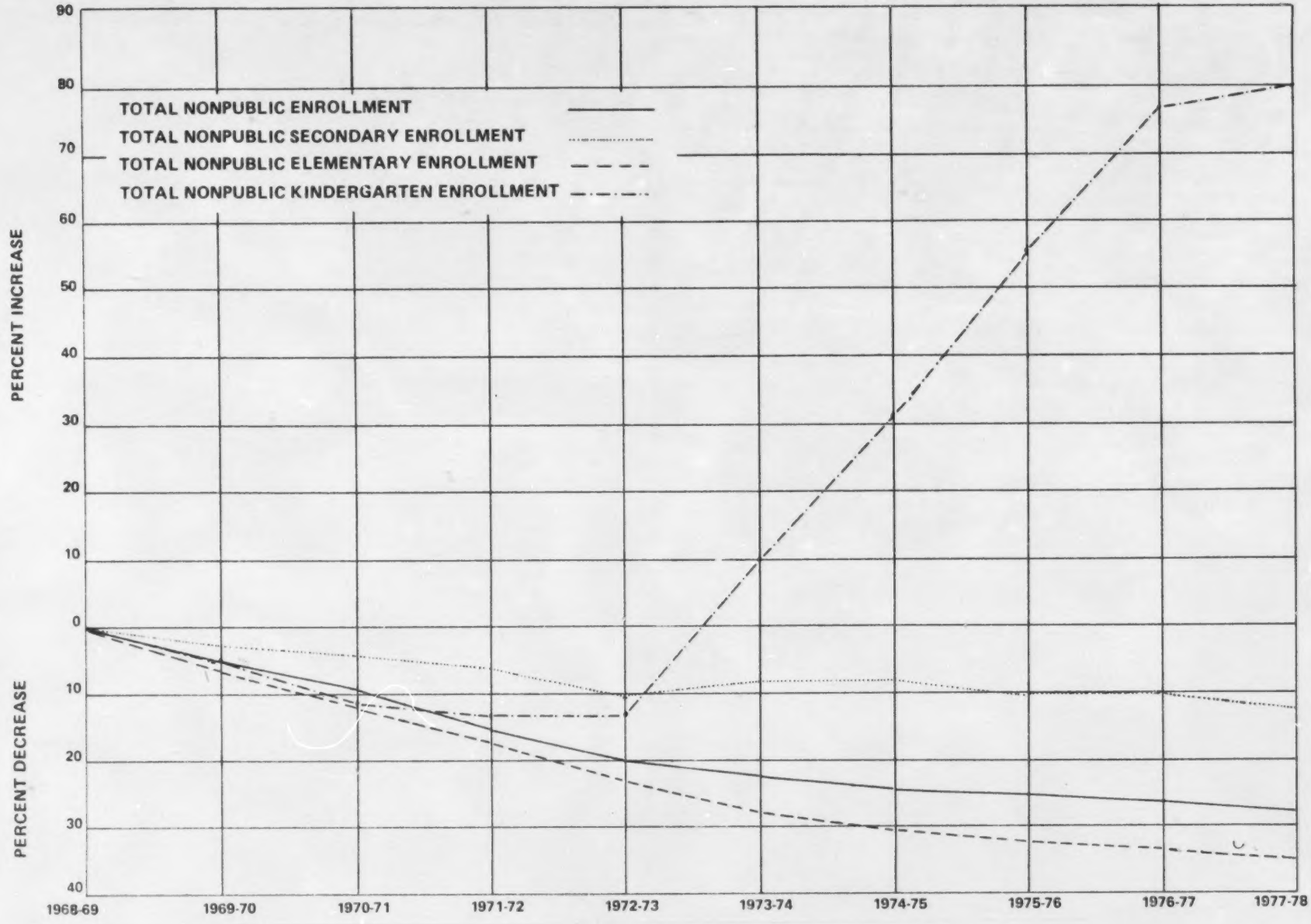
ACTUAL AND PROJECTED FALL PUBLIC AND PRIVATE SCHOOL ENROLLMENTS BY LEVEL 1968-1987[1]



[1] *Projections: Selected Educational Statistics to 1987-88,* Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg, Pa., 1978.

FIGURE 19

PERCENT CHANGE IN NONPUBLIC SCHOOL ENROLLMENT BY LEVEL, BASED ON THE 1968-69 SCHOOL YEAR



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

In Figure 20, the percentage growth in Roman Catholic nonpublic school enrollment is contrasted with that of the non-Catholic nonpublic schools. The Catholic school enrollments are dropping relative to 1968-69 while the non-Catholic nonpublic school enrollments have been rising. Though not large enough to offset the overall decline shown in Figure 19, it is clear that the rise of the "Christian School" represents a dramatic percentage change in the involvement of non-Catholics in the nonpublic schools, however, the increase in the number of pupils is relatively small (see Table 14).

Figures 21, 22 and 23 compare the percentage change in Catholic and non-Catholic nonpublic school enrollments at the kindergarten, elementary and secondary levels. These indicate that only at the kindergarten level have the Catholic enrollments risen in a manner similar to that of the non-Catholic nonpublic schools. In contrast the rise in non-Catholic enrollment has occurred at all levels including the secondary schools according to these graphs.

Due to the decline in Catholic enrollment the proportion of students in nonpublic schools has declined over all with 45 percent in nonpublic schools in 1968-69, 41.8 percent in nonpublic schools in 1977-78 and this figure is projected to fall to 40.3 percent by 1987-89 (Table 11).

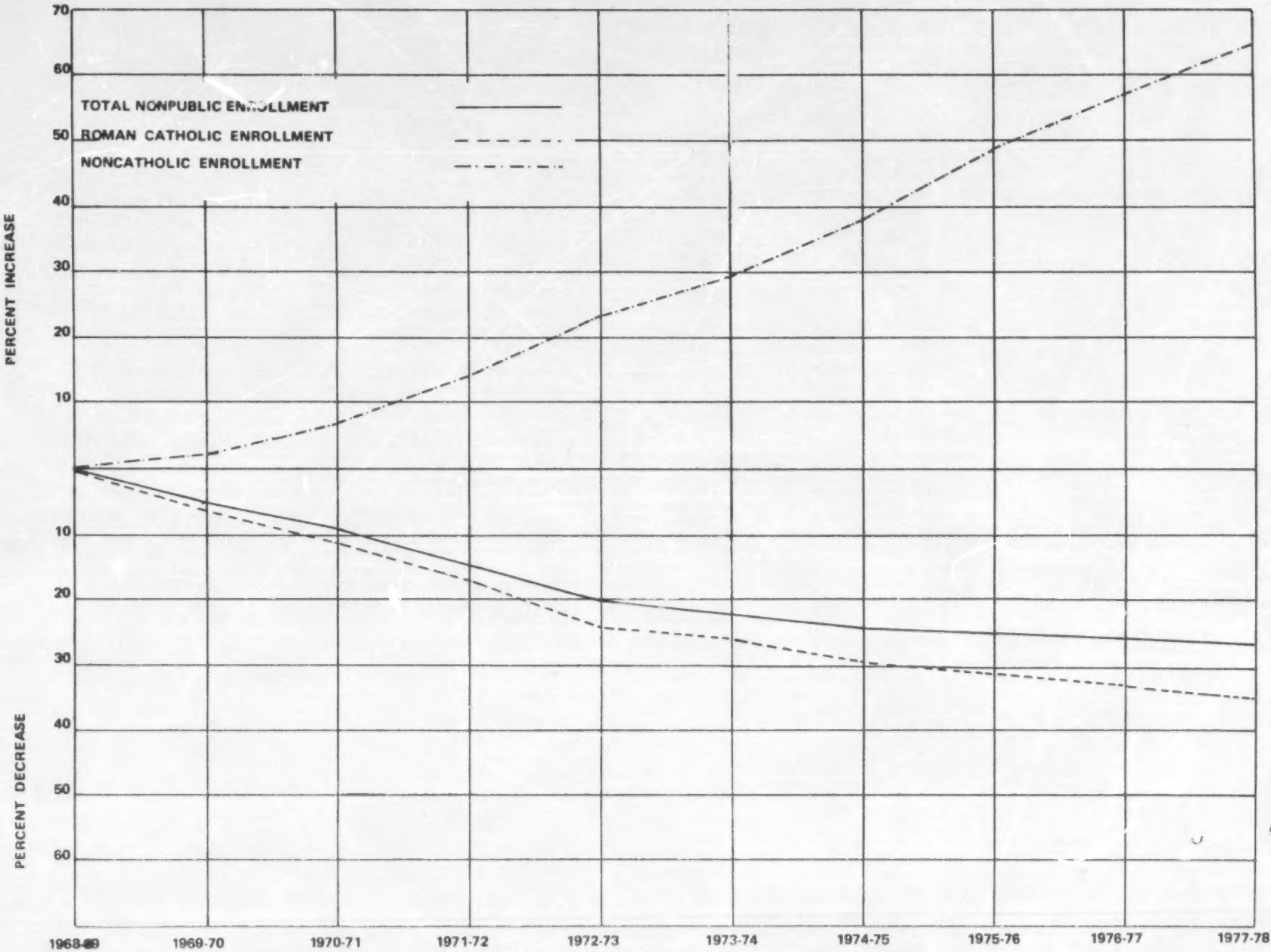
Table 11

The Relative Percentage of Public and Nonpublic School Enrollments Over Time[1]

Year	Public	Nonpublic
1968-69	55.0	45.0
1969-70	55.9	44.1
1970-71	56.8	43.2
1971-72	57.1	42.9
1972-73	57.2	42.8
1973-74	58.3	41.7
1974-75	59.0	41.0
1975-76	59.8	40.2
1976-77	58.9	41.1
1977-78	58.2	41.8
Projected		
1978-79	58.3	41.6
1979-80	58.5	41.5
1980-81	58.7	41.3
1981-82	58.9	41.1
1982-83	59.0	41.0
1983-84	59.2	40.8
1984-85	59.3	40.7
1985-86	59.5	40.5
1986-87	59.6	40.4
1987-88	59.7	40.3

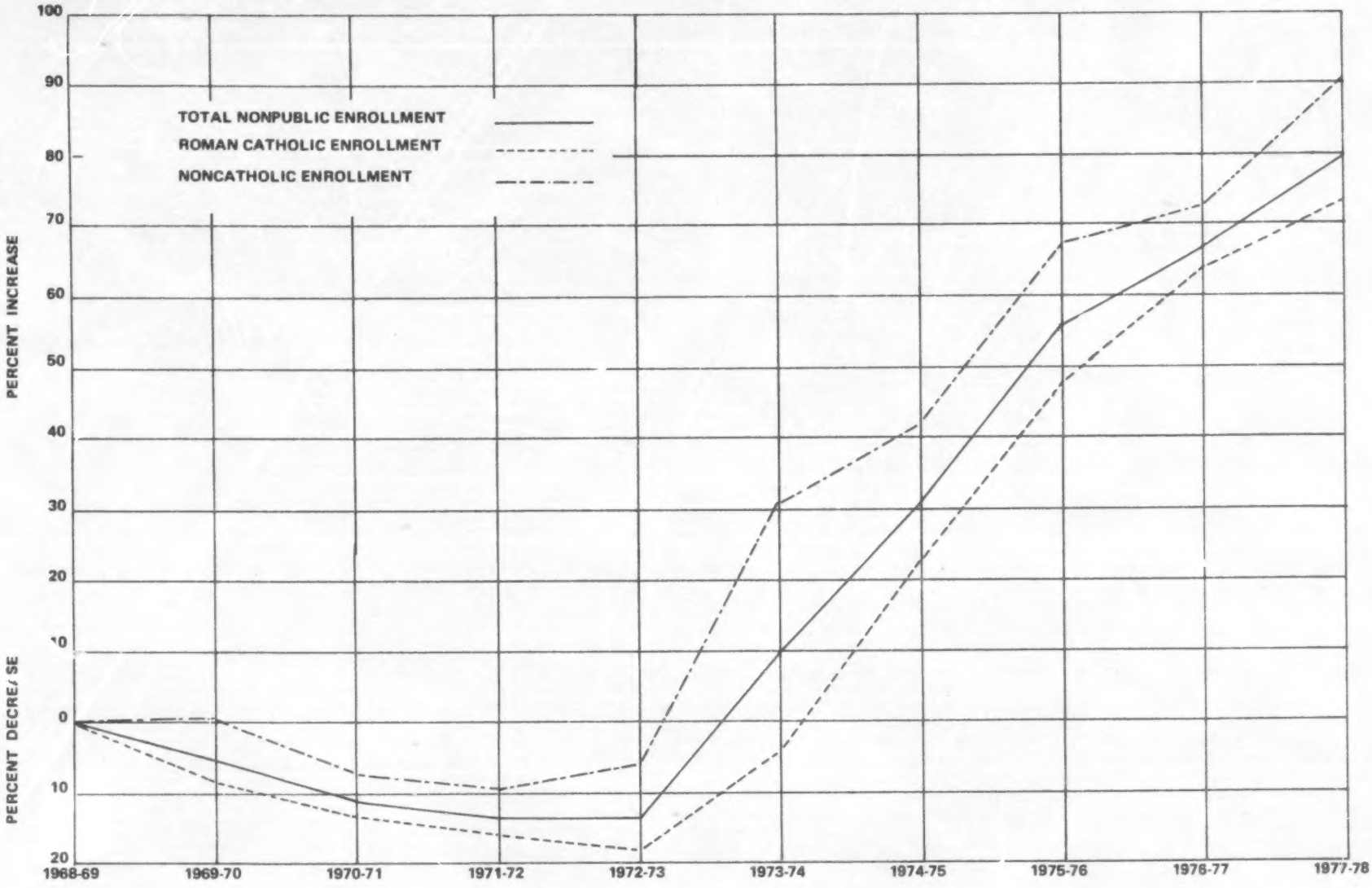
[1]Derived from Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg (1978).

FIGURE 20
PERCENT CHANGE IN TOTAL NONPUBLIC SCHOOL ENROLLMENT VS. PERCENT CHANGE IN ROMAN CATHOLIC AND NONCATHOLIC ENROLLMENT, BASED ON THE 1968-69 SCHOOL YEAR



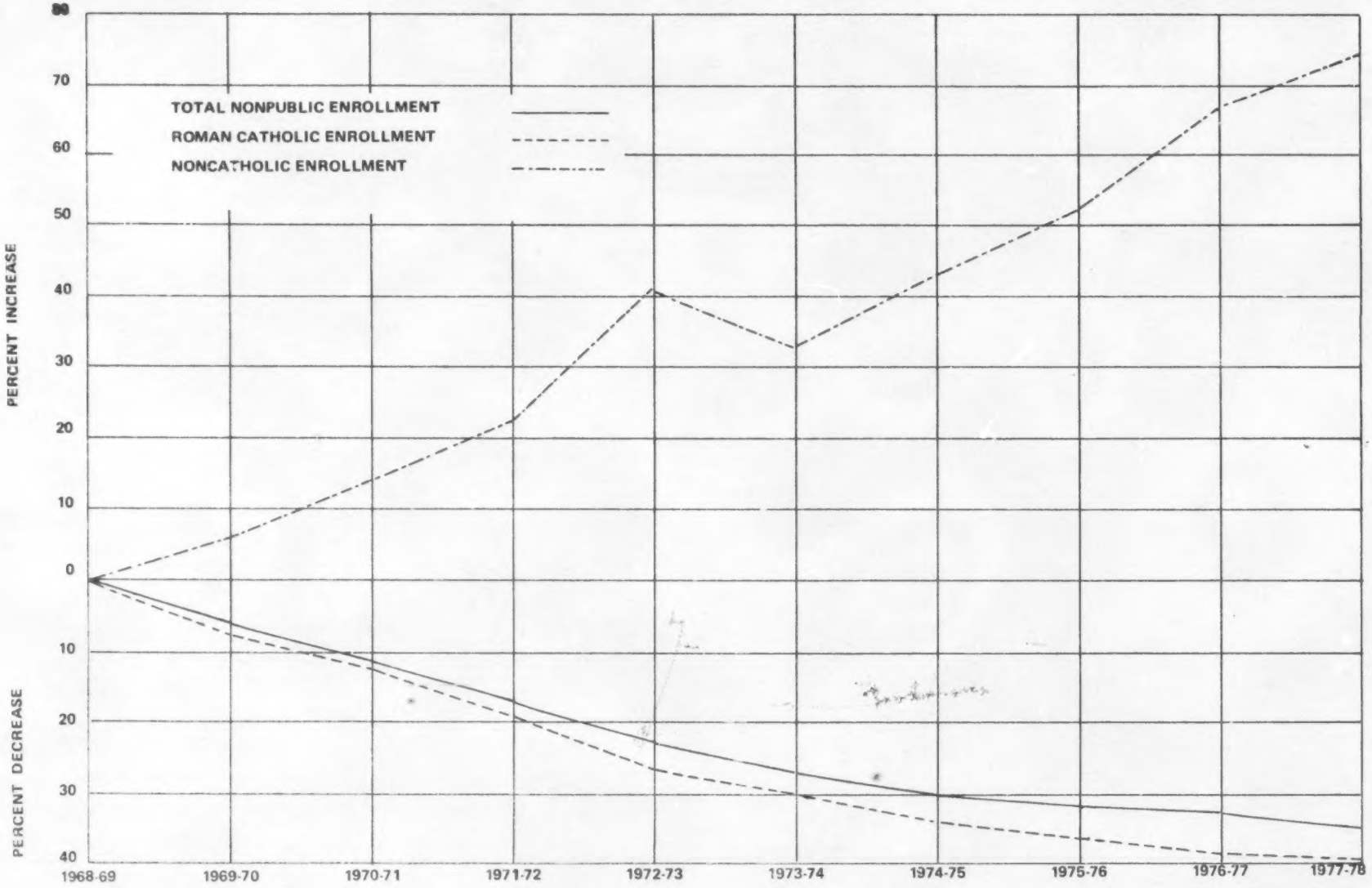
Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 21
PERCENT CHANGE IN TOTAL NONPUBLIC KINDERGARTEN VS. PERCENT CHANGE IN ROMAN CATHOLIC AND NONCATHOLIC KINDERGARTEN ENROLLMENT, BASED ON THE 1968-69 SCHOOL YEAR



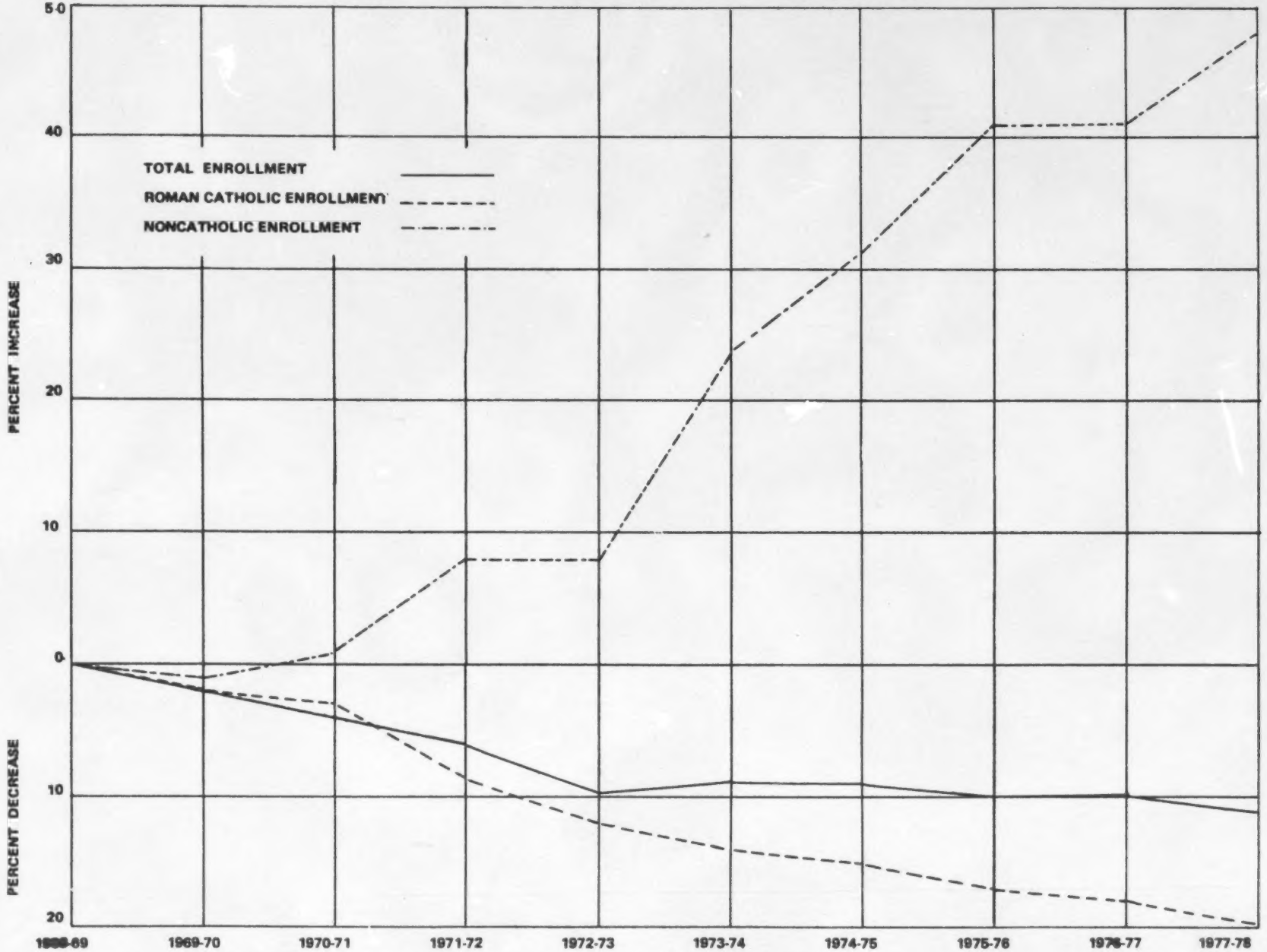
Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 22
PERCENT CHANGE IN TOTAL NONPUBLIC ELEMENTARY ENROLLMENT VS. PERCENT CHANGE IN ROMAN CATHOLIC AND NONCATHOLIC ENROLLMENT, BASED ON THE 1968-69 SCHOOL YEAR



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 23
PERCENT CHANGE IN TOTAL NONPUBLIC SECONDARY ENROLLMENT VS. PERCENT CHANGE IN ROMAN CATHOLIC AND NONCATHOLIC ENROLLMENT, BASED ON THE 1968-69 SCHOOL YEAR



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

In Table 12 we find that the proportion of all elementary pupils found in a nonpublic elementary school has declined from 25.7 percent in 1968-69 to 22 percent in 1977-78 and will rise only slightly between then and 1987-88. The proportion in secondary nonpublic schools should remain relatively constant at between 10 and 11 percent.

Table 12

Pennsylvania's Nonpublic Elementary and Secondary Education Enrollments Expressed as a Percent of Total Public and Nonpublic Enrollment[1]

Fall	Percentage of Students Enrolled in Nonpublic Elementary Schools	Secondary Schools
1968	25.7	11.4
1969	24.4	10.9
1970	23.5	10.5
1971	22.4	10.1
1972	21.4	9.7
1973	21.3	9.8
1974	21.3	9.8
1975	21.3	9.8
1976	21.7	10.0
1977	22.0	10.0
	Projected	
1978	22.2	10.1
1979	22.4	10.1
1980	22.6	10.1
1981	22.8	10.1
1982	23.0	10.1
1983	23.1	10.2
1984	22.9	10.5
1985	22.6	10.8
1986	22.4	10.9
1987	22.3	10.9

[1]From Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 13 is a more detailed table, reflecting numerical and percentage grade level changes expected between 1977-78 and 1987-88 in public and nonpublic enrollments as well as overall change. As indicated here, the secondary grades will experience the greatest declines during this period with an overall 28.8 percent decline in public secondary enrollment and a 23.1 percent decline in nonpublic secondary school enrollment. In contrast, the figures for elementary enrollment are a decline of 16.5 percent and 11.5 percent for the public and nonpublic elementary schools respectively.

Table 13

Actual 1977-78 and Projected Public and Private Enrollment Changes Over Time from 1977-78 to 1987-88[1]

Grade Level	1977-78 (Fall) Enrollments			1987-88 (Fall) Enrollments			(1977-87) Numerical Change			(1977-78) Percentage Change		
	Public	Nonpublic	Total	Public	Nonpublic	Total	Public	Nonpublic	Total	Public	Nonpublic	Total
K	140,440	18,815	159,225	137,600	23,900	161,500	-2,840	+5,085	+2,275	-2.0	+27.0	+1.4
1	151,775	34,946	186,721	133,200	31,300	164,500	-18,575	-3,646	-22,221	-12.2	-10.4	-11.9
2	147,594	35,276	182,870	122,400	30,000	152,400	-25,194	-5,276	-30,470	-17.1	-15.0	-16.7
3	141,585	33,983	175,568	118,000	29,500	147,500	-23,585	-4,483	-28,068	-16.7	-13.2	-16.0
4	140,466	33,546	174,012	114,800	28,900	143,700	-25,666	-4,646	-30,313	-18.3	-13.8	-17.4
5	144,976	33,828	178,804	113,100	28,400	141,500	-31,876	-5,428	-37,304	-22.0	-16.0	-20.9
6	150,690	34,793	185,483	108,900	27,200	136,100	-41,790	-7,593	-49,383	-27.7	-21.8	-26.6
Elementary Exceptionals	36,506	6,070	42,576	31,600	5,400	37,000	-4,906	-670	-5,576	-13.4	-11.0	-13.1
Grades K to 6	1,054,032	231,257	1,285,259	879,600	204,600	1,084,200	-174,432	-26,657	-201,059	-16.5	-11.5	-15.6
7	164,299	35,063	199,362	113,200	26,400	139,600	-51,099	-8,663	-59,762	-31.1	-24.7	-30.0
8	171,866	35,786	207,652	114,200	26,300	140,500	-57,666	-9,486	-67,152	-33.5	-26.5	-32.3
9	183,933	29,203	213,136	122,200	21,400	143,600	-61,733	-7,803	-69,536	-33.6	-26.7	-32.6
10	184,147	27,899	212,046	129,700	21,600	151,300	-54,447	-6,299	-60,746	-29.6	-22.6	-28.6
11	175,190	27,806	202,996	132,400	22,400	154,800	-42,790	-5,406	-48,196	-24.4	-19.4	-23.7
12	162,557	26,929	189,486	127,600	22,300	149,900	-34,957	-4,629	-39,586	-21.5	-17.2	-20.9
Secondary Exceptionals	32,502	2,579	35,081	25,500	2,000	27,500	-7,002	-579	-7,581	-21.5	-22.5	-21.6
Grades 7 to 12	1,074,494	185,265	1,259,759	764,800	142,400	907,200	-309,694	-42,865	-352,559	-28.8	-23.1	-28.0
Total K to 12	2,128,526	416,522	2,545,018	1,644,400	347,000	1,991,400	-484,126	-69,522	-553,618	-22.7	-16.7	-21.8

[1] Derived from Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg (1978).

In graphic form, these changes are shown in Figure 24 for both public and nonpublic schools and for all schools by individual grade in Figure 25. Again it is obvious that the biggest impact of the birth decline will be found in the secondary grades during the next decade.

It is clear from the foregoing tables and graphs that the Roman Catholic schools constitute the largest proportion of nonpublic school enrollments. Table 14 shows the proportion of Roman Catholic school pupils since 1968-69 and indicates that a drop in this proportion has occurred, with a corresponding marked increase in the enrollments of other nonpublic schools (a 64.7 percent increase) and an increase in their proportion of all public enrollments from 7.7 percent to 17.3 percent during this period.

Table 15 indicates the change in enrollments during the past decade, broken down by Roman Catholic and other nonpublic schools for all levels of basic education. Here again we see a decline, overall, but an increase in other than Roman Catholic school enrollments.

Table 14

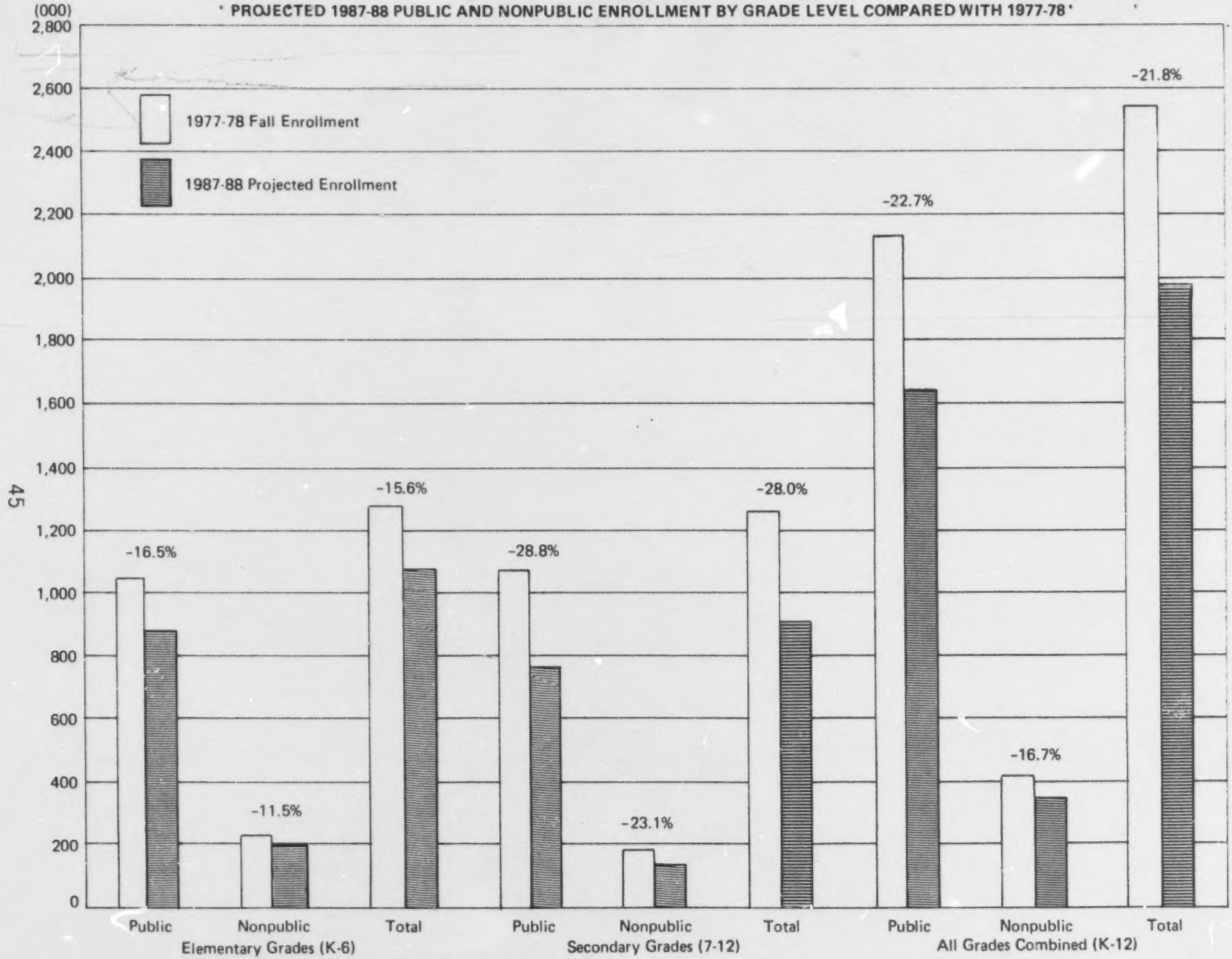
Comparative Nonpublic School Enrollments
1968-69 Through 1977-78

School Year	Roman Catholic	Percent	Other Nonpublic	Percent	Total	Percent
1968-69	526,409	92.3	43,819	7.7	570,228	100.0
1969-70	497,071	91.7	44,898	8.3	541,969	100.0
1970-71	470,478	91.0	46,673	9.0	517,151	100.0
1971-72	436,937	89.9	49,890	10.2	486,827	100.0
1972-73	402,114	88.2	53,988	11.8	456,102	100.0
1973-74	387,388	87.3	56,607	12.7	443,995	100.0
1974-75	372,910	86.0	60,482	14.0	433,392	100.0
1975-76	362,745	84.8	65,224	15.2	427,969	100.0
1976-77	355,173	83.8	68,881	16.2	424,054	100.0
1977-78	344,532	82.7	72,171	17.3	416,703	100.0
Change (1968-78)	-181,877	-34.6	28,352	+64.7	-153,525	- 26.9

Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

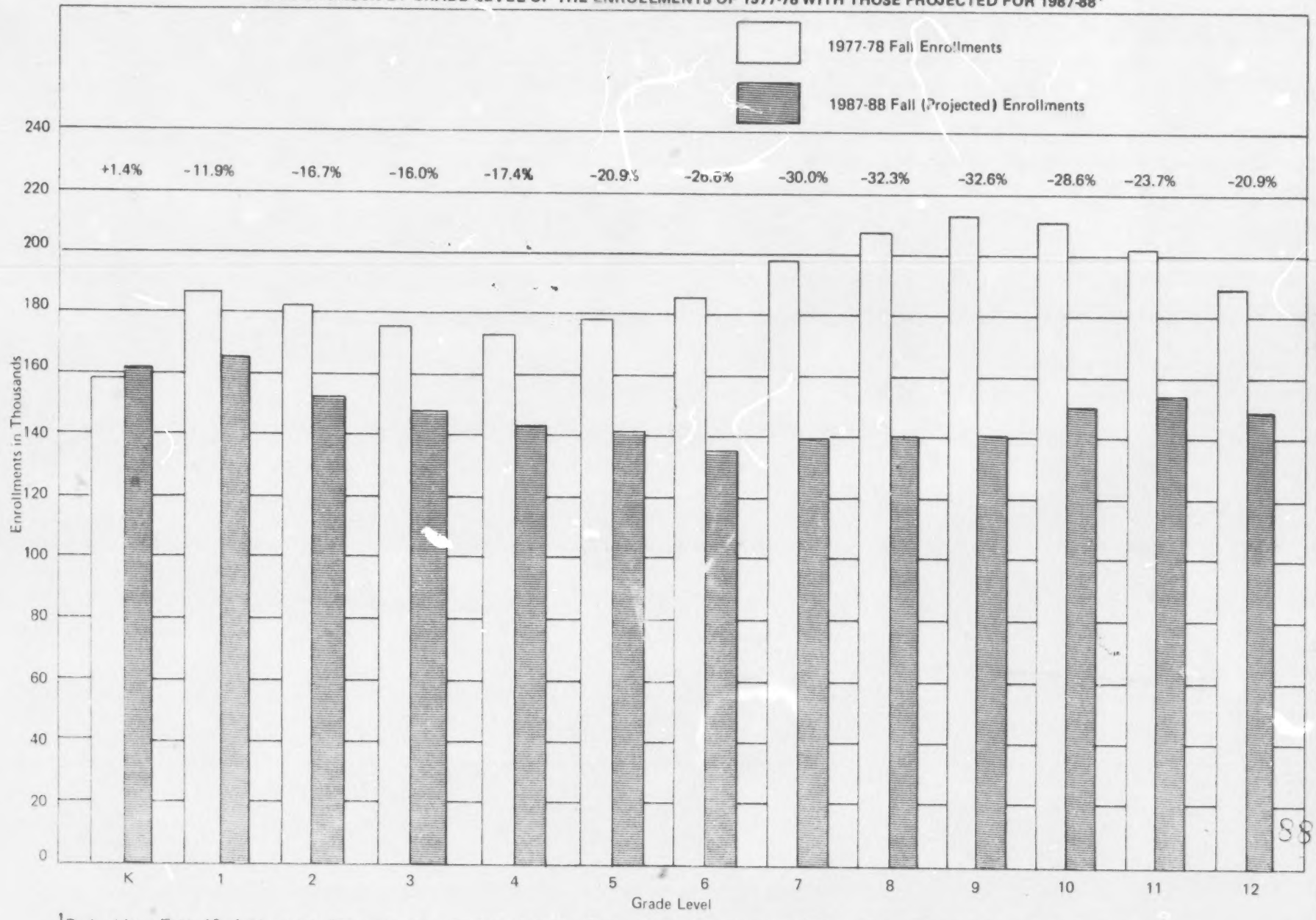
FIGURE 24

* PROJECTED 1987-88 PUBLIC AND NONPUBLIC ENROLLMENT BY GRADE LEVEL COMPARED WITH 1977-78 *



Source: Table 13 of this report but does not include exceptional classes.

FIGURE 25
A COMPARISON BY GRADE LEVEL OF THE ENROLLMENTS OF 1977-78 WITH THOSE PROJECTED FOR 1987-88[1]



[1]Derived from Table 13 of this report. Does not include exceptional classes. Figures above columns indicate projected percentage change over the 10-year period from 1977-78 to 1987-88.

Table 15

Comparative Nonpublic School Enrollments by Level 1968-69 Through 1977-78[1]

Year	Total			Kindergarten			Elementary			Secondary		
	All Nonpublic	Roman Catholic	Others	All Nonpublic	Roman Catholic	Others	All Nonpublic	Roman Catholic	Others	All Nonpublic	Roman Catholic	Others
1968-69	570,228	526,409	43,819	10,456	6,301	4,155	424,802	402,883	21,919	134,970	117,225	17,745
1969-70	541,969	497,071	44,898	9,985	5,775	4,210	399,404	376,204	23,200	132,580	115,092	17,488
1970-71	517,151	470,478	46,673	9,329	5,485	3,844	378,149	353,170	24,979	129,673	111,823	17,850
1971-72	486,827	436,937	49,890	9,064	5,282	3,782	351,489	324,500	26,989	126,274	107,155	19,119
1972-73	456,102	402,114	53,988	9,062	5,156	3,906	325,103	294,217	30,886	121,937	102,741	19,196
1973-74	443,995	387,388	56,607	11,536	6,043	5,493	309,520	280,398	29,122	122,939	100,947	21,992
1974-75	433,392	372,910	60,482	13,674	7,765	5,909	296,995	265,672	31,323	122,723	99,473	23,250
1975-76	427,969	362,745	65,224	16,324	9,334	6,990	289,713	256,460	33,253	121,932	96,951	24,981
1976-77	424,054	355,173	68,881	17,483	10,303	7,180	284,904	248,209	36,695	121,667	96,661	25,006
1977-78	416,703	344,532	72,171	18,815	10,887	7,928	278,158	240,119	38,039	119,730	93,526	26,204
% Change	-26.9%	-34.6%	64.7%	79.9%	72.8%	90.8%	-34.5%	-40.4%	73.5%	-11.3%	-20.2%	47.7%

[1]Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Figure 26 shows that the percent distribution of nonpublic school enrollment by school affiliation is about the same in 1977-78 as it was in the preceding year.

Public and Private High School Graduates

Figure 27 represents the actual number of high school graduates produced by Pennsylvania's public and nonpublic schools between the school years 1968-69 and 1977-78 and projects graduates to 1987-88. As can be seen, there will be a marked decrease in the number of high school graduates beginning about 1980. This, of course, has very real implications for the future of higher education, as we will see in the next chapter.

The projected decline in graduates will not impact all areas of the state equally. Figure 28 reflects differential changes in the number of graduates that have been projected using a model developed by Robert P. Newton of The Pennsylvania State University. Some counties such as Philadelphia will experience sharper declines while a few are projected as having a slight increase in the number of graduates by 1988-89. These differences seem to be largely a function of migration patterns, and the effect of economic growth patterns on age distribution, rather than differences in fertility rates.

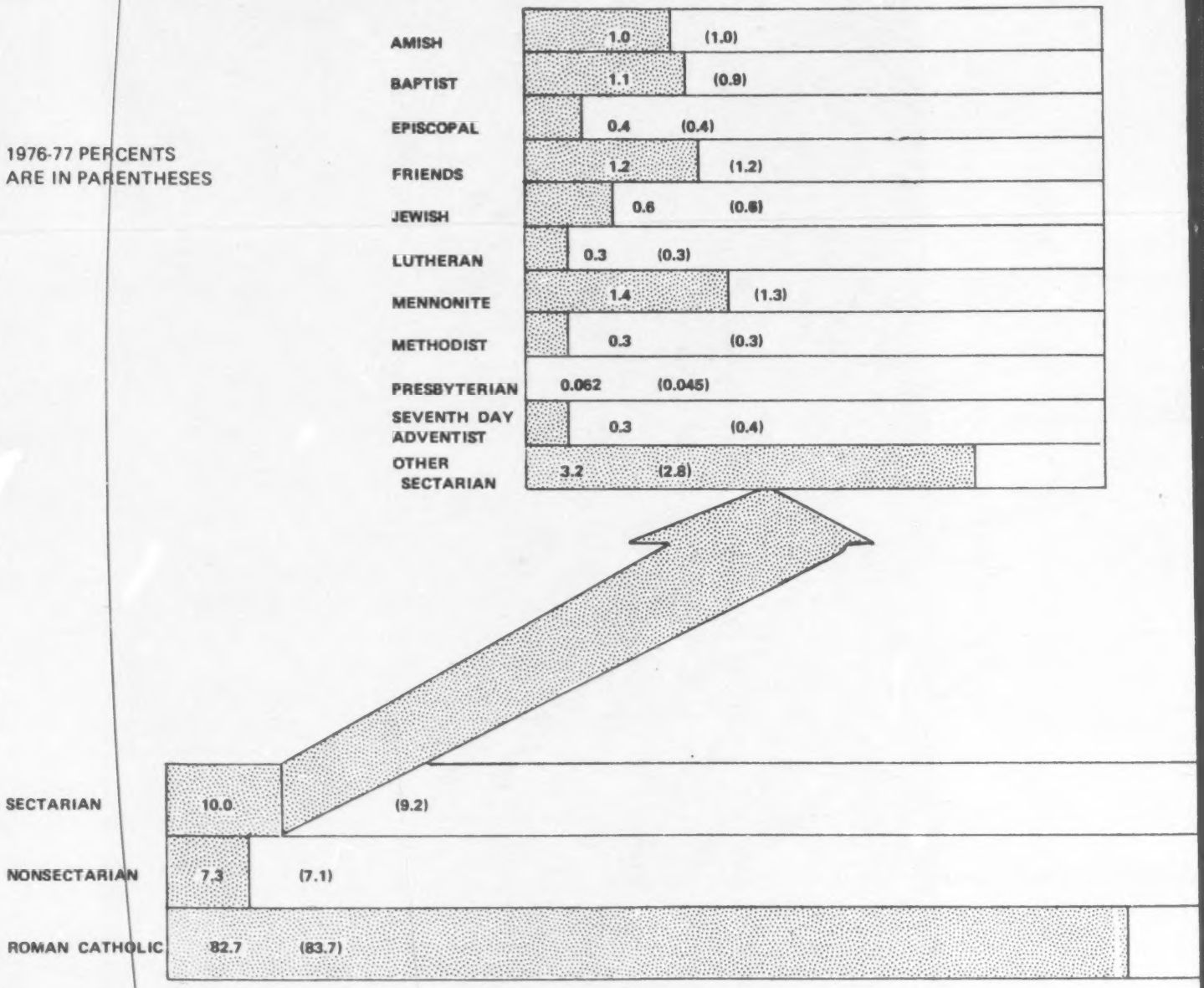
For those who need detailed projections by county, Table 16 is also included here. It shows the number of high school graduates by county for each year from 1978-79 to 1988-89 and reflects the total expected change during this period. These projections are of course subject to revision when and if unexpected events occur, such as the Johnstown flood. The projections represent only a best estimate of what we may expect, given current patterns of birth, migration, etc. It should also be noted that the projections aggregate to different total enrollments for the state than anticipated by the Department of Education. The projected trend may be the most significant aspect of these projections by Newton.

Professional Staffing and the Pupil-Teacher Ratio

Through the years the size of the staffs of our public schools has increased, as new programs, new curricula and growing enrollments required. Table 17 reflects those changes that have taken place since 1968-69 and that are projected to take place from 1978-79 on, with regard to the number of pupils per teacher and the number of staff personnel (teachers and others) per thousand students. The table indicates that the number of pupils per teachers has fallen since 1968-69 from 22.9 to 1 to 18.8 to 1 in 1977-78 and may continue to slowly decline through 1980-81, then stabilize around a figure of 17 to 1 through 1987-88. The staff per thousand pupils figure is seen as rising to 1981-82 and then stabilizing around a figure of 67 per thousand.

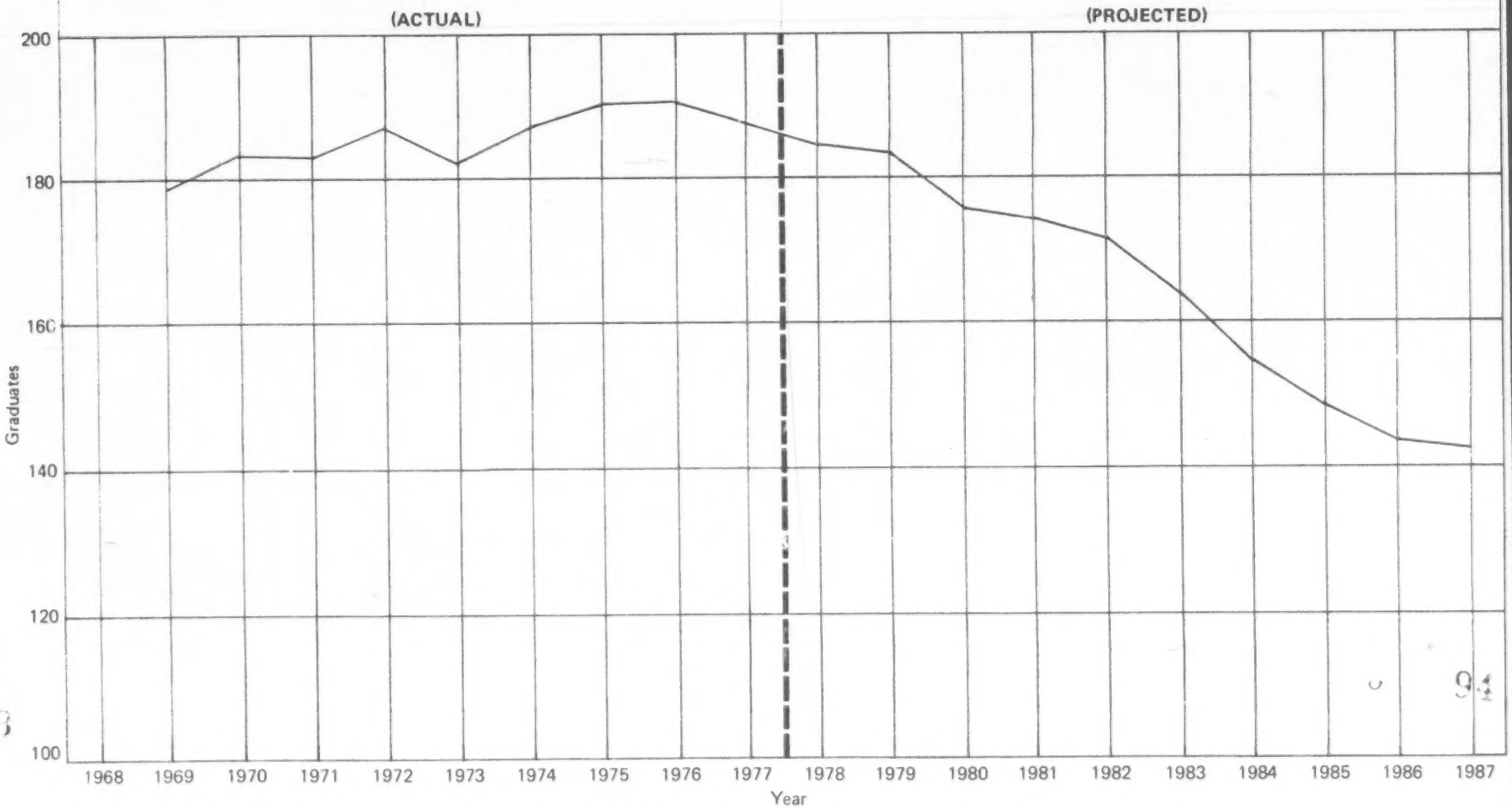
It should be noted that a pupils per teacher ratio of 19 to 1 does not mean that the typical class has 19 pupils in it. The recent development of teachers who work with special groups or who have special skills that bring them into a given class to teach in an area such as math or reading and after that move to another class has made the ratio less meaningful. Many teachers become upset when they see the pupil-teacher ratio used to support the generalization that teachers teach small classes. What they face, day to day, may be a substantially larger number of children than would be implied by the ratio. Also projected ratios reflect trends and they should in no way be cited as what the Pennsylvania Depatment of Education says should occur.

FIGURE 26
PERCENT DISTRIBUTION OF NONPUBLIC SCHOOL ENROLLMENT BY AFFILIATION OF SCHOOL, 1977-78



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

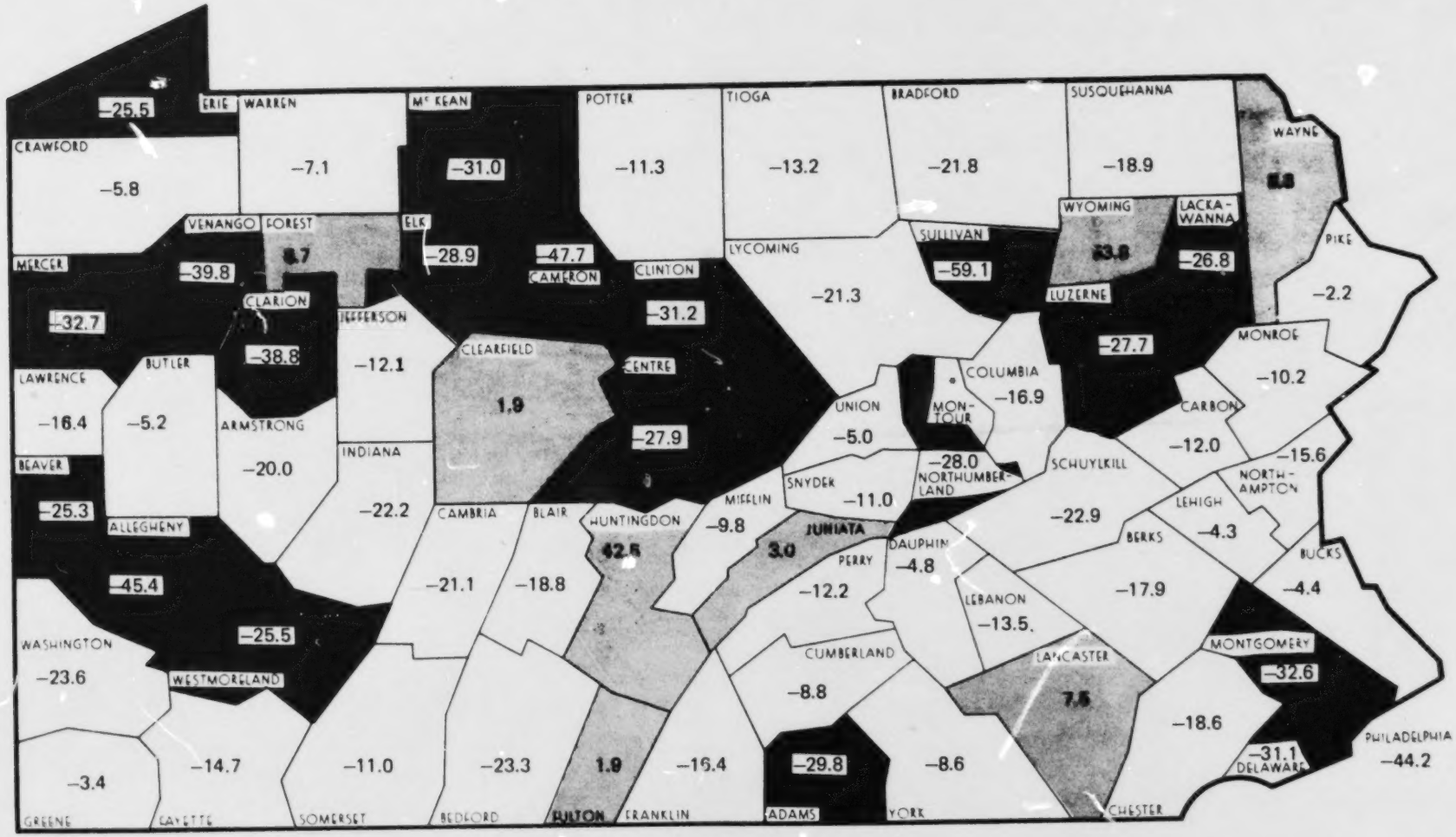
FIGURE 27
ACTUAL AND PROJECTED GRADUATES FROM THE PUBLIC AND PRIVATE HIGH SCHOOLS OF PENNSYLVANIA[1]



[1] *Projections: Selected Education Statistics for Pennsylvania to 1987-88,* Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1978

FIGURE 28

PROJECTED PERCENTAGE CHANGE BY COUNTY IN HIGH SCHOOL GRADUATES BETWEEN 1978-79 AND 1988-89[1]



Counties projected to increase in graduates

Counties with 25% or greater decrease in graduates

* Montour County –19.0%

[1]Derived from: Newton, Robert D., *Projections of High School Graduates by County for Pennsylvania 1977-1988*, Office of Budget and Planning, The Pennsylvania State University, University Park, Pennsylvania (October 18, 1977).

Table 16

Projected High School Graduates by County from 1978-79
to 1988-89 with Estimates of Total Change Over This Period[1]

County	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	Change 1978 to 1979	% Change 1978 to 1989
Adams	1,066	1,188	1,133	1,073	1,073	920	833	818	805	832	748	- 318	-29.8
Allegheny	25,043	23,857	22,429	20,885	20,508	18,744	17,374	15,972	15,119	14,323	13,667	-11,376	-45.4
Armstrong	1,467	1,485	1,414	1,387	1,419	1,297	1,195	1,255	1,222	1,224	1,174	- 293	-20.0
Beaver	3,622	3,642	3,462	3,319	3,215	2,972	2,805	2,786	2,610	2,676	2,704	- 918	-25.3
Bedford	832	802	781	769	766	721	663	641	577	607	638	- 194	-23.3
Berks	5,075	5,063	4,843	4,926	4,904	4,465	4,358	4,173	3,997	4,043	4,165	- 910	-17.9
Blair	2,430	2,582	2,462	2,432	2,487	2,229	2,135	2,017	1,969	1,986	1,973	- 457	-18.8
Bradford	1,167	1,215	1,223	1,147	1,183	1,092	1,068	994	1,046	986	913	- 254	-21.8
Bucks	8,747	8,711	8,440	8,604	8,754	8,476	8,340	8,107	7,910	7,583	8,358	- 389	- 4.4
Butler	2,305	2,370	2,336	2,421	2,386	2,469	2,559	2,392	2,318	2,272	2,184	- 121	- 5.2
Cambria	3,374	3,212	2,874	2,854	2,879	2,848	2,727	2,680	2,480	2,141	2,659	- 715	-21.2
Cameron	130	120	109	114	102	110	90	94	83	92	68	- 62	-47.7
Carbon	772	700	715	711	723	698	661	640	664	656	679	- 93	-12.0
Centre	1,191	1,212	1,222	1,117	1,135	1,069	944	925	939	989	859	- 332	-27.9
Chester	5,247	5,018	4,983	5,190	4,985	4,717	4,628	4,455	4,270	4,284	4,271	- 976	-18.6
Clarion	683	590	508	492	490	474	469	437	409	403	418	- 265	-38.8
Clearfield	1,580	1,559	1,510	1,543	1,676	1,641	1,704	1,599	1,570	1,604	1,610	30	1.9
Clinton	622	601	520	543	548	486	443	463	428	424	428	- 194	-31.2
Columbia	1,034	1,056	1,023	1,010	998	953	935	893	804	912	859	- 175	-16.9
Crawford	1,063	1,057	1,009	1,004	1,045	1,028	1,006	1,010	918	1,002	1,001	- 62	- 5.8
Cumberland	3,288	3,277	3,072	3,086	3,357	3,041	2,916	2,725	2,819	2,815	2,997	- 291	- 8.8
Dauphin	3,648	3,746	3,522	3,663	3,718	3,243	3,272	3,186	3,180	3,380	3,472	- 176	- 4.8
Delaware	10,572	10,138	9,963	9,824	9,502	9,601	8,537	7,991	7,937	7,706	7,287	- 3,285	-31.1
Elk	723	755	732	708	710	678	665	656	642	540	514	- 209	-28.9
Erie	4,704	4,671	4,589	4,324	4,102	4,020	3,826	3,721	3,757	3,602	3,504	- 1,200	-25.5
Fayette	2,481	2,477	2,486	2,334	2,467	2,370	2,288	2,227	2,141	2,105	2,115	- 366	-14.8
Forest	80	85	91	91	97	106	95	100	92	90	87	7	8.8
Franklin	1,719	1,733	1,746	1,869	1,773	1,606	1,494	1,530	1,420	1,438	1,437	- 282	-16.4
Fulton	158	162	196	175	192	160	178	163	162	160	161	3	1.9
Greene	526	577	541	497	491	597	594	535	560	512	508	- 18	- 3.4
Huntingdon	661	612	683	753	792	810	758	726	804	915	942	281	42.5
Indiana	1,532	1,325	1,390	1,319	1,401	1,401	1,449	1,493	1,373	1,454	1,191	- 341	-22.3
Jefferson	812	767	724	792	759	707	640	680	685	617	714	- 98	-12.1
Juniata	267	262	286	290	282	297	277	259	236	229	275	8	3.0
Lackawanna	3,658	3,628	3,409	3,243	3,161	3,029	2,175	2,745	2,855	2,811	2,677	- 981	-26.8
Lancaster	5,135	6,123	6,395	6,573	6,273	6,053	5,559	5,516	5,430	5,436	5,521	386	7.5
Lawrence	1,811	1,759	1,691	1,664	1,705	1,596	1,530	1,482	1,476	1,472	1,514	- 297	-16.4
Lebanon	1,611	1,633	1,567	1,548	1,554	1,591	1,442	1,375	1,331	1,262	1,394	- 217	-13.5
Lehigh	3,579	4,215	3,975	3,914	3,894	3,787	3,829	3,574	3,280	3,372	3,425	- 154	- 4.3
Luzerne	4,392	4,238	4,119	4,049	3,953	3,590	3,707	3,459	3,362	3,373	3,176	- 1,216	-27.7
Lycoming	1,843	1,866	1,794	1,808	1,766	1,614	1,538	1,531	1,427	1,430	1,450	- 393	- 6.2
McKean	946	889	837	837	822	807	735	698	706	684	653	- 293	-31.0
Mercer	2,207	2,139	1,995	1,911	1,922	1,848	1,501	1,599	1,567	1,536	1,485	- 722	-32.7
Mifflin	776	730	781	822	874	872	875	815	709	738	700	- 76	- 9.8
Monroe	845	905	838	900	830	853	932	792	755	798	758	- 86	-10.2
Montgomery	11,736	11,607	11,083	11,130	10,732	9,969	9,206	8,641	8,445	8,199	7,913	- 3,823	-32.6
Montour	253	247	258	291	256	276	278	232	201	222	205	- 48	-19.0
Northampton	3,756	3,650	3,533	3,536	3,538	3,270	3,261	3,251	3,134	2,946	3,169	- 587	-15.6
Northumberland	1,525	1,434	1,390	1,420	1,417	1,384	1,287	1,186	1,117	1,084	1,098	- 427	-28.0
Perry	590	618	545	565	581	549	522	551	492	549	518	- 72	-12.2
Philadelphia	19,922	19,740	19,648	18,469	17,646	16,213	15,511	14,283	13,227	12,716	11,107	- 8,815	-44.2
Pike	137	146	184	138	179	160	169	176	158	125	134	- 3	- 2.2
Potter	282	296	268	255	284	243	243	224	235	250	250	- 32	-11.3
Schuylkill	2,401	2,396	2,228	2,307	2,261	2,159	2,032	2,057	1,964	1,889	1,851	- 550	-22.9
Snyder	453	467	473	411	408	391	375	369	371	385	403	- 50	-11.0
Somerset	1,294	1,313	1,305	1,278	1,285	1,233	1,248	1,142	1,173	1,204	1,152	- 142	-11.0
Sullivan	137	110	105	94	76	76	78	66	58	70	56	- 81	-59.1
Susquehanna	693	704	680	644	640	551	542	554	682	528	562	- 131	-18.9
Tioga	676	679	643	651	617	559	555	576	552	555	587	- 89	-13.2
Union	383	389	385	364	387	368	346	364	362	360	364	- 19	- 5.0
Venango	1,182	1,200	1,098	1,115	1,084	993	933	851	844	766	711	- 471	-39.8
Warren	687	636	689	705	724	728	717	633	654	616	638	- 49	- 7.1
Washington	3,510	3,367	3,211	3,158	3,132	3,090	2,952	2,648	2,810	2,703	2,683	- 827	-23.6
Wayne	521	524	520	555	521	553	654	548	528	550	567	46	8.8
Westmoreland	5,372	5,361	4,946	5,087	5,158	4,950	4,602	4,466	4,216	4,180	4,002	- 1,370	-25.5
Wyoming	394	348	369	364	390	420	414	419	516	522	606	212	53.8
York	4,474	4,514	4,222	4,330	4,211	4,078	3,926	3,935	4,020	4,066	4,090	- 384	- 8.6
Pennsylvania	185,800	184,500	178,200	175,400	171,200	163,800	155,600	149,300	144,600	142,000	140,000	-45,800	-24.7

[1]Derived from Newton, Robert D. Projections of High School Graduates by County for Pennsylvania 1977-78. Office of Budget and Planning, The Pennsylvania State University, University Park, PA (October 18, 1977). The aggregate totals shown are initially higher and finally lower than those projected by the Pennsylvania Department of Education by between ± 2 to 5 percent. This is due to different methodologies as well as aggregation error. The later projections are lower than those of the PDE.

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Table 17

Pupil-Classroom Teacher Ratios and Staff per Thousand Pupil Ratios in Pennsylvania's Public Schools[1]

Year	Pupil-Teacher Ratios	Staff Per 1000
1968-69	22.9 to 1	50.8
1969-70	22.1 to 1	52.0
1970-71	21.7 to 1	52.7
1971-72	21.7 to 1	52.8
1972-73	21.1 to 1	54.4
1973-74	20.5 to 1	56.2
1974-75	19.7 to 1	58.6
1975-76	19.3 to 1	59.8
1976-77	19.2 to 1	60.4
1977-78	18.8 to 1	61.5
	Projected[2]	
1978-79	19 to 1	62
1979-80	18 to 1	63
1980-81	18 to 1	65
1981-82	17 to 1	66
1982-83	17 to 1	67
1983-84	17 to 1	67
1984-85	17 to 1	67
1985-86	17 to 1	67
1986-87	17 to 1	67
1987-88	17 to 1	67

[1]Derived from Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg (1978).

[2]Projected ratios do not reflect what should happen but rather what is likely to occur.

The number and percentage of Pennsylvania's school professional personnel in different functional categories is given in Table 18 for each year from 1968-69 to 1977-78 and projections to 1987-88 are provided. A decline in professional staffing is evident already, as shown in Figure 29, and is projected to continue due to the impact of the recent birth decline.

Historically, however, between 1968-69 and 1977-78, most categories of public school personnel continued to increase despite an enrollment decline of 7.7 percent (Table 20). This is apparently the result of mandated programs introduced by legislation and court decisions, particularly in the area of special education which required more specialized personnel and administrators. Table 19 gives similar figures for specific positions.

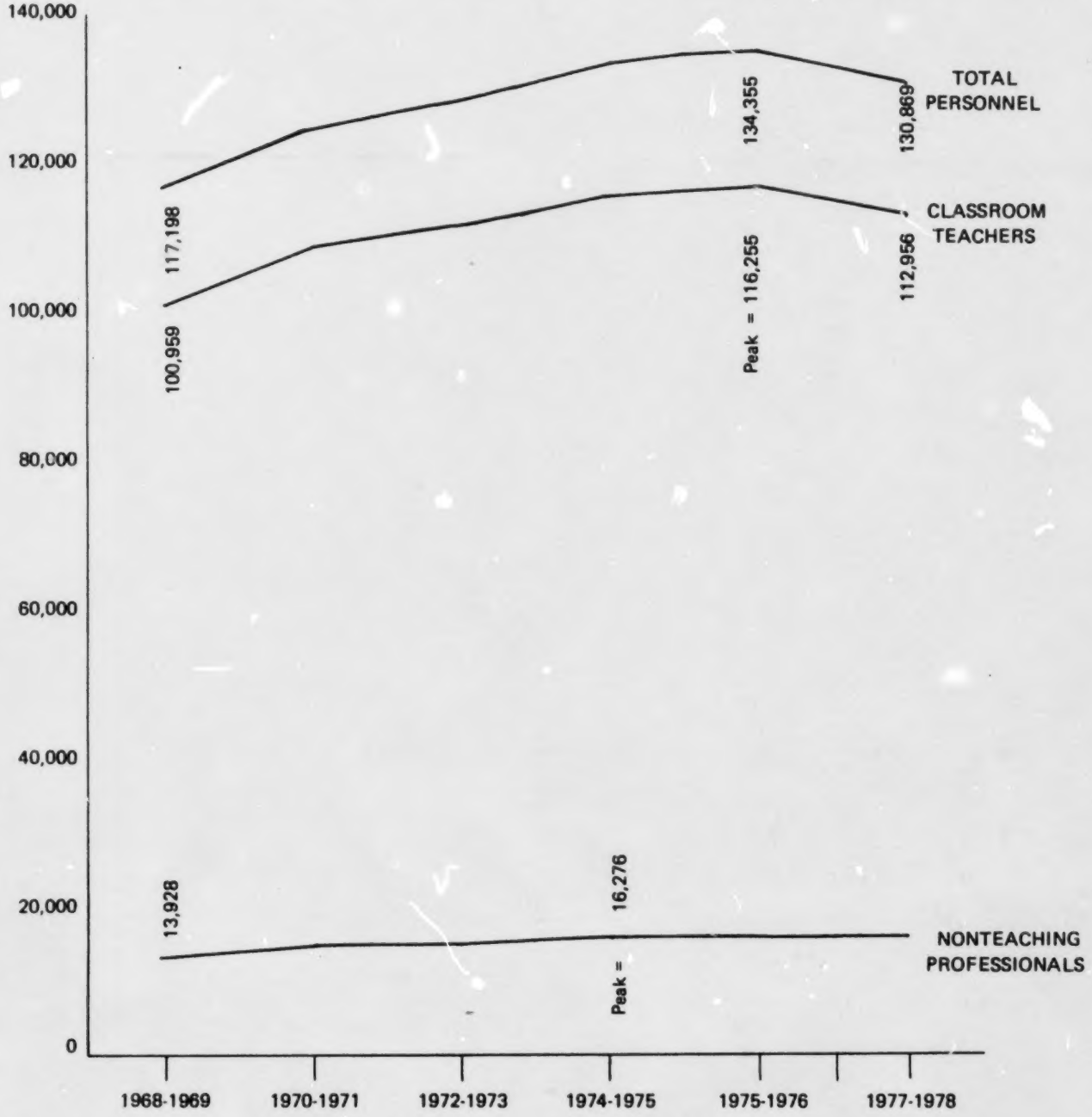
Table 18

Actual and Projected Number and Percentage of Pennsylvania's Public School Professional Personnel by Function[1]

Year	All Professional Personnel	Percent	Classroom Teachers	Percent	Administrative & Supervisory Personnel	Percent	Coordinate Services Personnel	Percent	Others	Percent
1968-69	117,198	100.0	100,959	86.1	6,656	5.7	8,306	7.1	1,277	1.1
1969-70	122,040	100.0	106,104	86.9	5,924	4.9	8,900	7.3	1,112	0.9
1970-71	124,606	100.0	108,772	87.3	6,031	4.8	9,066	7.3	737	0.6
1971-72	125,144	100.0	109,035	87.1	5,950	4.8	8,886	7.1	1,273	1.0
1972-73	128,338	100.0	111,682	87.0	6,145	4.8	9,187	7.2	1,324	1.0
1973-74	130,423	100.0	113,089	86.7	6,239	4.8	9,546	7.3	1,549	1.2
1974-75	133,541	100.0	115,668	86.6	6,401	4.8	9,875	7.4	1,597	1.2
1975-76	*134,355	100.0	*116,255	86.5	*6,528	4.9	9,716	7.2	1,856	1.4
1976-77	132,588	100.0	114,425	86.3	6,494	4.9	*9,740	7.4	*1,929	1.5
1977-78	130,869	100.0	112,956	86.3	6,506	5.0	9,714	7.4	1,693	1.3
					Projected					
1978-79	128,200	100.0	110,900	86.5	6,400	5.0	9,500	7.4	1,400	1.1
1979-80	125,900	100.0	108,900	86.5	6,300	5.0	9,300	7.4	1,400	1.1
1980-81	124,300	100.0	107,500	86.5	6,200	5.0	9,200	7.4	1,400	1.1
1981-82	123,000	100.0	106,400	86.5	6,100	5.0	9,100	7.4	1,400	1.1
1982-83	120,000	100.0	103,800	86.5	6,000	5.0	8,900	7.4	1,300	1.1
1983-84	116,900	100.0	101,100	86.5	5,800	5.0	8,700	7.4	1,300	1.1
1984-85	114,500	100.0	99,000	86.5	5,700	5.0	8,500	7.4	1,300	1.1
1985-86	112,600	100.0	97,400	86.5	5,600	5.0	8,300	7.4	1,300	1.1
1986-87	111,100	100.0	96,100	86.5	5,500	5.0	8,200	7.4	1,300	1.1
1987-88	109,600	100.0	94,800	86.5	5,400	4.9	8,100	7.4	1,300	1.1
Percentage Growth 1977-78 to 1987-88	-16.3%		-16.1%		-17.0%		-16.6%		-23.2%	
Peak Year (*) to 1988	-18.4%		-18.5%		-17.3%		-16.8%		-32.6%	

[1]Derived from Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1978.

FIGURE 29
DISTRIBUTION OF BASIC EDUCATION PROFESSIONAL PERSONNEL IN PENNSYLVANIA BY MAJOR POSITION CATEGORY FOR SELECTED YEARS 1968-69 THROUGH 1977-78[1]



[1] *Our Schools Today: Professional Personnel Report 1977-78,* Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Vol. 17, No. 6, Harrisburg, Pa. 1978.

Table 19

Growth of District Professional Personnel by Position, 1967-77

Position	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	% Change
Total	105,175	116,860	121,614	124,166	124,839	128,018	130,045	133,309	134,355	132,588	26.0
Administrative & Supervisory											
Executive Director	-	-	-	-	27	27	25	25	27	27	0.0
Asst. Executive Director	-	-	-	-	76	69	70	61	58	43	-43.4
Superintendent, County	66	66	66	66	-	-	-	-	-	-	*
Asst. Superintendent, County	115	110	117	100	-	-	-	-	-	-	*
Superintendent, District	282	292	310	340	441	501	493	492	489	502	78.0
Associate Supt., District	20	20	25	17	-	-	-	-	-	-	*
Assistant Supt., District	132	137	141	159	168	187	193	175	182	209	58.0
Supervising Principal	261	250	217	184	-	-	-	-	-	-	*
Administrative Assistant	318	392	404	433	464	462	459	408	369	335	53.5
Secondary Principal	1,003	1,012	1,031	1,066	1,064	1,057	1,070	1,092	1,097	1,071	5.1
Asst. or Vice Sec. Principal	567	682	737	767	800	850	911	995	1,059	1,057	86.4
Elementary Principal	1,329	1,424	1,451	1,519	1,548	1,573	1,586	1,622	1,677	1,651	24.2
Asst. or Vice Elem. Principal	56	67	80	85	89	112	114	120	103	108	92.9
Combined Elem & Sec. Principal	24	32	32	40	45	57	63	74	92	99	3.1
Asst. or Vice Comb. Elem. & Sec. Principal	2	1	5	6	13	19	20	26	29	35	1650.0
Director, Vocational Education	68	77	81	69	71	73	78	72	84	91	33.8
Coordinator, Trade & Ind. Ed.	29	45	78	73	74	80	84	99	98	92	217.2
Supervisor	1,006	a/	1,149	1,107	1,070	1,078	1,073	1,140	1,164	1,174	16.7
Classroom Teachers											
Nursery School Teacher	12	316	367	566	497	498	400	227	193	164	1266.7
Kindergarten Teacher	2,618	2,813	2,456	2,494	2,540	2,584	2,568	2,620	2,653	2,567	- 1.9
Elementary Teacher	40,617	43,903	47,794	49,085	45,907	46,757	46,304	49,473	49,052	47,678	17.4
Secondary Teacher	44,219	47,288	48,784	49,492	52,447	53,363	54,203	52,680	52,759	51,867	17.3
Combined Elem. & Sec. Teacher	967	1,462	985	1,145	1,289	1,427	1,601	1,953	2,167	2,373	145.4
Special Education Teacher	3,242	3,924	4,291	4,453	4,692	5,251	5,993	6,605	7,214	7,456	130.0
Speech Correctionist	477	551	612	455	778	873	993	1,060	1,098	1,189	149.3
Head of Department	557	666	755	836	885	949	1,027	1,050	1,119	1,131	103.0
Coordinate Services											
Asst. to Supt. for Instruction	29	35	118	100	36	34	38	37	39	37	27.6
Asst. to Supt. for Bus. Affairs	37	51	55	56	51	50	51	45	38	33	-10.8
Business Manager	21	23	31	34	43	44	47	51	76	82	290.5
Dental Hygienist	173	190	185	175	162	155	155	159	146	125	-27.7
Guidance Personnel, Elementary	163	244	253	290	535	574	596	614	644	637	290.8
Guidance Personnel, Secondary	1,680	1,833	1,805	1,909	2,247	2,353	2,455	2,599	2,605	2,624	56.2
Guidance Personnel, Combined	242	264	479	508	216	230	222	217	234	250	3.3
Home and School Visitor	257	665	878	881	362	365	376	399	420	406	58.0
Librarian, Elementary	603	711	756	809	850	901	925	939	974	956	58.5
Librarian, Secondary	874	877	903	943	982	1,010	1,035	1,042	1,036	1,019	16.6
Librarian, Combined	134	127	188	178	178	181	169	124	131	134	0.0
Manager, School Food Services	61	64	83	86	70	72	68	63	56	50	-18.0
Occupational Therapist	1	10	1	3	-	1	4	4	6	6	500.0
Physical Therapist	14	15	25	24	21	21	24	35	47	53	278.6
Psychiatric Social Worker	16	27	32	65	23	24	24	23	23	22	37.5
Psychological Examiner	6	5	9	9	6	7	4	11	6	4	33.3
Psychologist, Intermediate Unit	-	-	-	-	105	125	161	185	217	238	126.7
Psychologist, District	167	612	387	217	219	234	254	278	288	304	82.0
School Nurse	2,019	2,126	2,219	2,214	2,191	2,210	2,209	2,192	2,167	2,148	6.4
Specialist	130	125	128	171	279	271	351	384	543	612	370.8
Unknown	561	2,311	1,112	737	1,273	1,324	1,549	1,597	1,856	1,929	243.8

a/ Data not available.

*Not applicable due to reorganization.

Table 20

Percentage Growth in Public School Personnel
Between 1968-69 and 1977-78 Compared with Enrollment Change[1]

Comparison Group	1968-69	1977-78	Change	Percentage Change
Public School Enrollment	2,307,000	2,129,000	-178,000	- 7.7
Classroom Teachers	100,959	112,956	11,997	11.9
Administrators & Supervisors	5,959	6,585	999	17.9
District Administrators	1,231	1,156	- 75	- 6.1
School Administrators	3,218	4,059	841	26.1
Secondary Principals	1,012	1,069	57	5.6
Asst. Secondary Principals	682	1,084	402	58.9
Elementary Principals	1,424	1,661	237	16.6
Asst. Elementary Principals	67	111	44	65.7
Other School Administrators	33	134	101	306.1
Supervisors	1,137	1,370	233	20.5
Guidance Personnel	1,341	3,457	1,116	47.7
Elementary Guidance	244	634	390	159.8
Secondary Guidance	1,833	2,568	735	40.1
Other Guidance Personnel	264	255	- 9	- 3.4
Allied Health	3,061	2,862	-199	- 6.5
Other Personnel	2,661	3,242	581	21.8

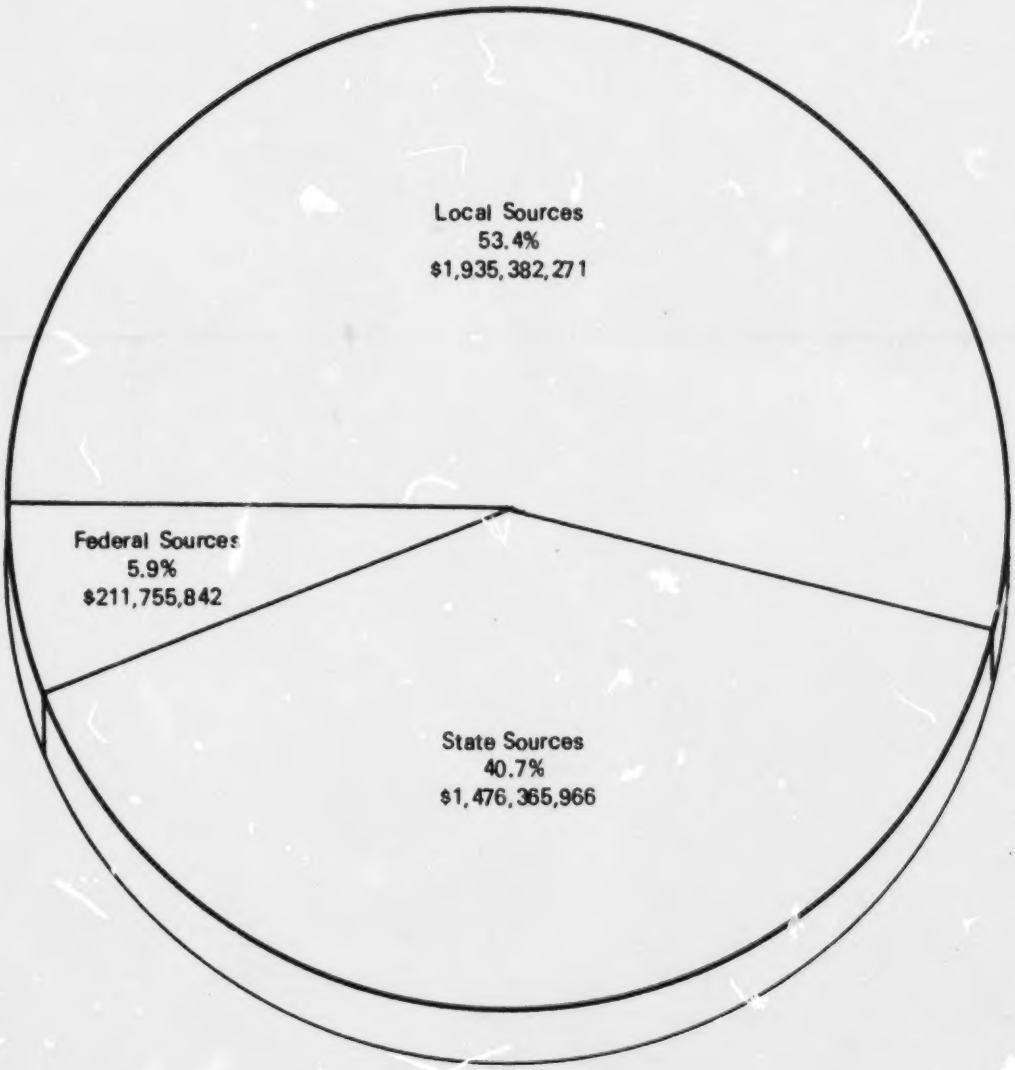
[1]Derived from data found in Trends in Nonteaching Professional Staffing in Pennsylvania Public Schools 1968-69 Through 1977-78, James P. Dorwart, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg (1978).

Basic Education Revenues and Expenditures

The monies for the support of basic education comes from three sources: local, state and federal. Figure 30 breaks down the 1976-77 general fund district revenues by source, showing the relative amounts (percent) from each. The primary source is local funding from taxes and constitutes 51.6 percent of the total while other local funding accounts for another 1.8 percent, or 53.4 percent all told. Federal sources provided only 5.9 percent of the revenues in 1976-77 while state funding accounted for the remaining 40.7 percent.

The proportion of funding from these sources (state, federal and local) over time is shown in Figure 31.

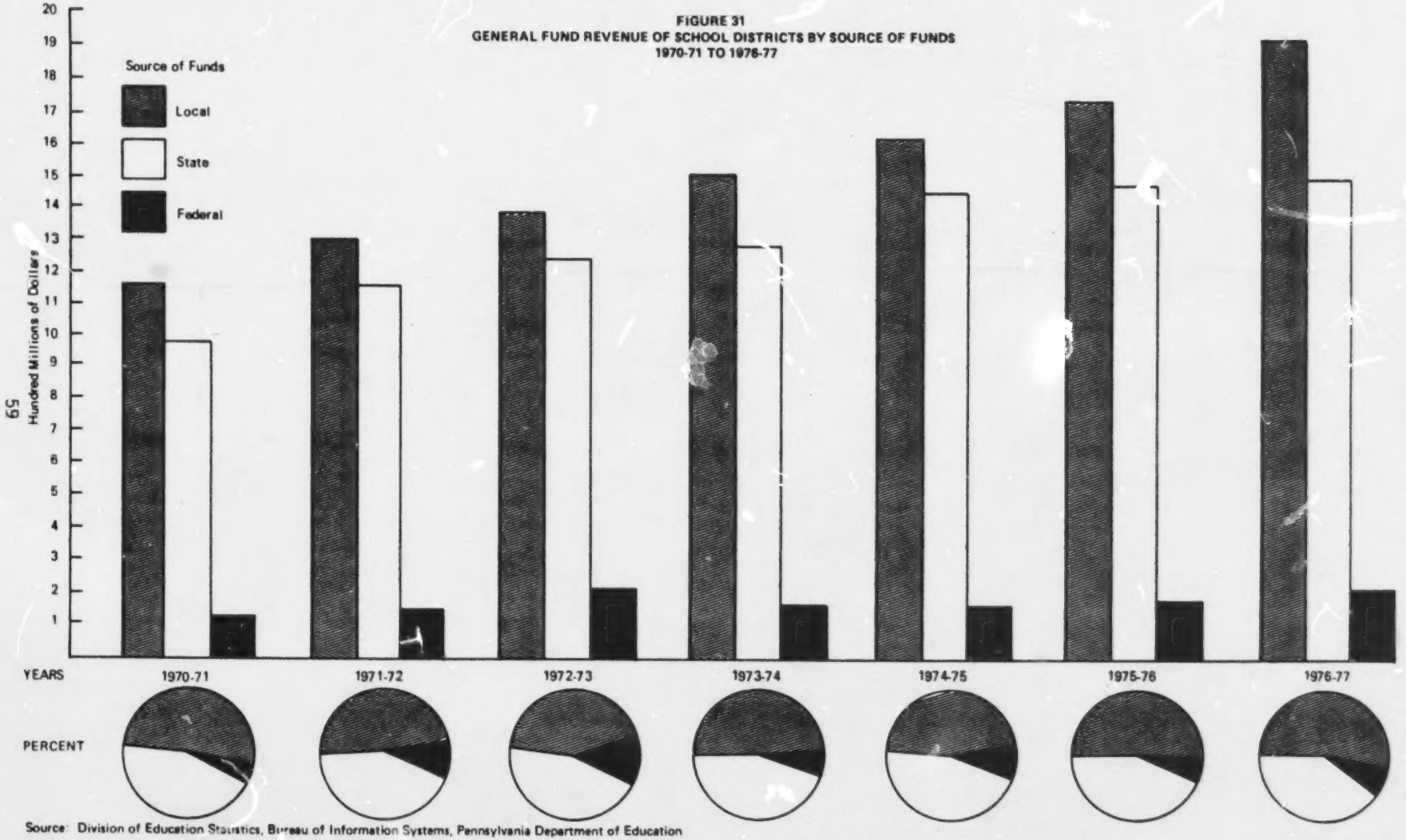
FIGURE 30
GENERAL FUND REVENUE OF SCHOOL DISTRICTS
BY SOURCE OF FUNDS, 1976-77



Total Revenue $3,623,504,079

Source: *Our Schools Today: Public School Financial Statistics Report* (Vol. 17, No. 7), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 31
GENERAL FUND REVENUE OF SCHOOL DISTRICTS BY SOURCE OF FUNDS
1970-71 TO 1976-77



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Since taxes represent a large proportion of school funding revenues, it is of interest to look at the sources of tax revenues. Figure 32 breaks down the school district tax collection of 1976-77 by the type of tax. Real estate taxes, for example, accounted for 77.6 percent of the total collected with the remainder coming largely from Act 511 taxes, i.e., from local income tax revenues, real estate transfer taxes, etc., (see also Part II of Table 23).

The budgeted local school taxes for the following years of 1977-78 are shown in Figure 33 with a budgeted increase of 1.4 percent in the percentage of tax revenues from real estate and a slight decline in the proportion budgeted from Act 511 sources.

When broken down by type of expenditure from the general fund, as in Figure 34, we find instruction requiring 53.4 percent of the monies and fixed charges (10 percent) and operation and maintenance (12.2 percent) accounting for an additional 22.2 percent with capital outlay and debt service adding a further 11.5 percent in 1976-77.

Transportation has been an increasingly important aspect in the expenditure picture, though still only accounting for about 4.4 percent of the total (Figure 34). This is also clearly seen in Table 21 where we see that the total expenditures for transporting pupils rose from $52,965,000 in 1967-68 to $165,989,000 in 1974-75. An increase of 17.7 percent has been observed just for the year 1974-75 to 1976-77, and a 213.4 percent increase occurred between 1967-68 and 1976-77.

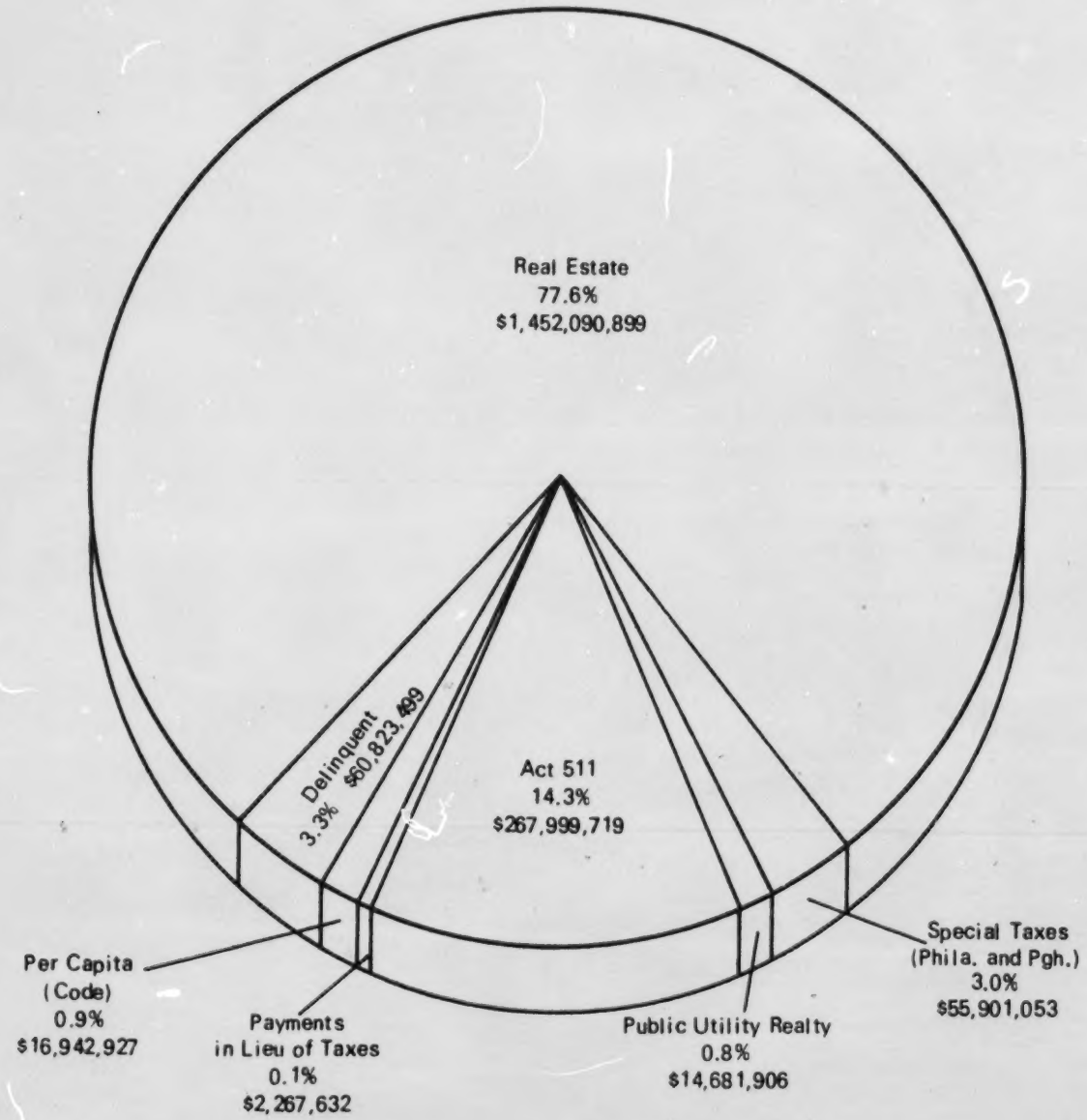
Table 22 breaks down the local and Act 511 taxes collected during 1976-77 in Pennsylvania and reveals the variety of so called "nuisance" taxes that are used to support basic education. Table 23, on the other hand, provides some year-by-year data on taxes by source, proportion from each source, and gives a mills on market value figure for each source.

Up to this point expenditures have been tabled in terms of the general fund. Table 24 allocates total expenditures by local, state and federal source when all the county, state and federal expenditures are included.

We see a tabling year-by-year in Table 25 of the general total fund expenditures broken down by administrative unit function. Instruction, for example, has obviously declined in importance from 59.5 percent of the total in 1967-68 to 53.4 percent in 1976-77, while fixed charges have risen from 5.3 percent to 10.0 percent of the total.

When we look at expenditures on a per pupil basis in Figure 35, we see that there has been a recent decline in state subsidies per average daily membership (ADM) while taxes per ADM have risen relatively sharply to match the rise in expenditures per ADM. Obviously, the local tax structure is being forced to carry more of the load and accounts for the great attention currently being given to the question of changing the state subsidy formulas as well as increasing the subsidies provided.

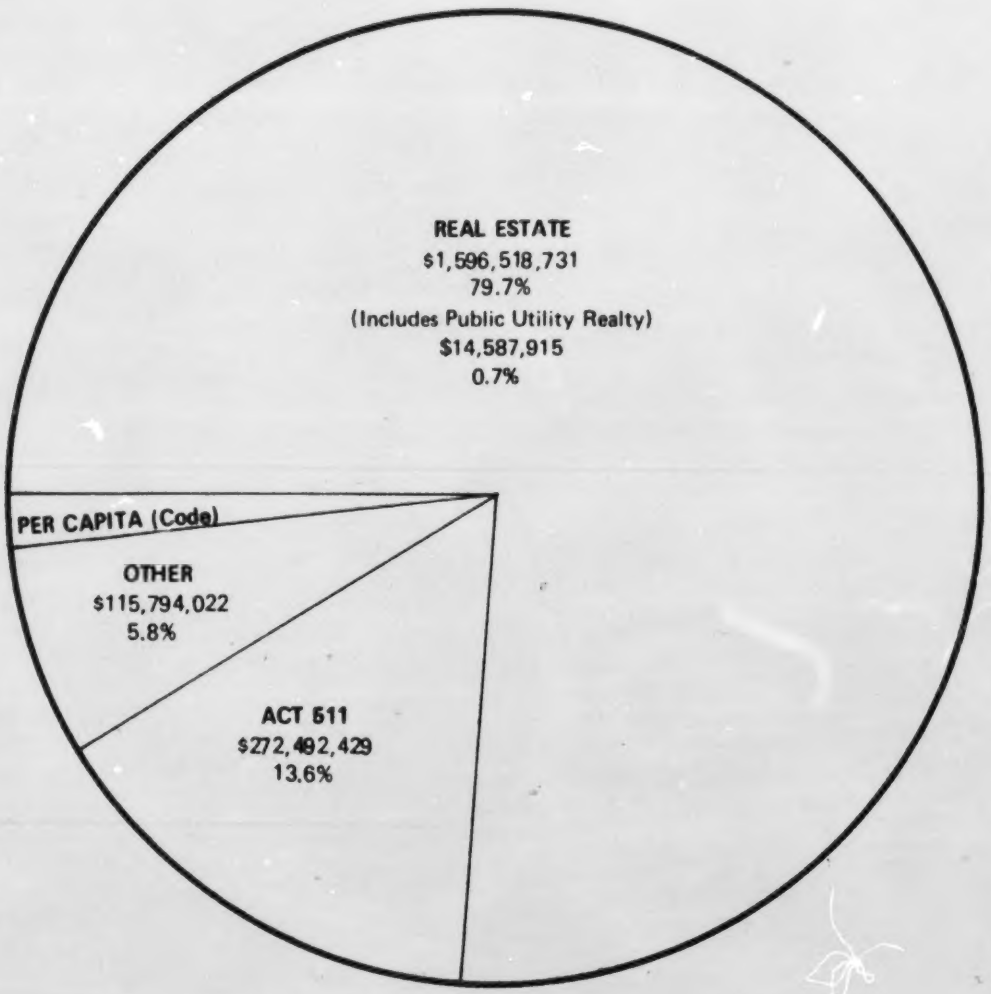
FIGURE 32
SCHOOL DISTRICT TAX COLLECTION BY TYPE OF TAX
1976-77



Total Tax Collection $1,870,707,635

Source: *Our Schools Today: Public School Financial Statistics Report* (Vol. 17, No. 7), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

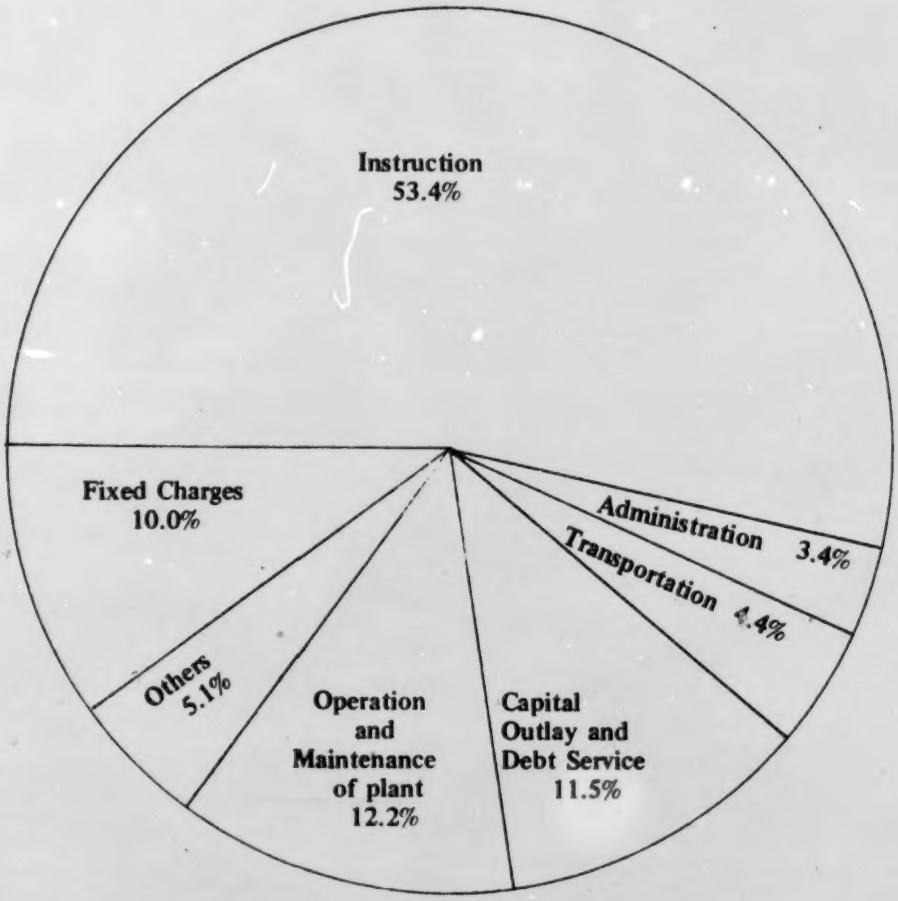
FIGURE 33
BUDGETED LOCAL SCHOOL TAXES, 1977-78



Total Local Taxes, $2,002,013,228

Source: *Our Schools Today: Public School Financial Statistics Report* (Vol. 17, No. 7), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 34
GENERAL FUND EXPENDITURES FOR PUBLIC SCHOOLS
EXPRESSED IN PERCENT, 1976-77



Source: "Annual Financial Report" 1976-77, Department of Education

Table 21

Expenditures Per Pupil and by Source of Funds from 1967-68 to 1976-77
With Percentage Change from 1974-75 as a Measure of Revenue Sharing Impact[1]

Expenditures	School Year										1974-75 to 1976-77 % Change
	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	
Expenditures Per Pupil Transported	$ 42.92	$ 48.96	$ 53.65	$ 57.95	$ 63.03	$ 69.62	$ 79.52	$ 94.37	$ 102.00	$ 110.08	% 16.6
Local Expenditures Per Pupil Transported[2]	26,401	34,862	34,895	38,818	N.A.	56,684	61,383	68,570	82,489	65,445	- 4.6
State Appropriations for Transportation[2]	26,564	27,668	35,549	38,803	N.A.	47,391	56,723	64,300	59,624	66,501	3.4
Federal Revenue Sharing Funds for Transportation[2]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	8,168[3]	12,244	34,043	316.8
Total Transportation Expenditures[2]	52,965	62,530	70,444	77,621	85,080	98,075	118,106	141,038	154,357	165,989	17.7

[1]Derived from data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2]The dollar amounts shown are to the nearest thousands, e.g., $26,564 = $26,563,632.

[3]1974-75 was the first school year that federal revenue sharing funds were appropriated for transportation of school pupils.

Table 22

A Breakdown of Local and Act 511 Taxes Collected in 1976-77 for School Purposes in Pennsylvania[1]

I. Local Taxes

Type of Tax	Amount	Mills on 1976 Market Value	Percent of Total
Total Taxes	$1,870,707,635	24.3	100.0
Real Estate			
Current and Interim	1,452,090,899	18.9	77.6
Public Utility Realty	14,681,906	0.2	0.8
Per Capita (Code)	16,942,927	0.2	0.9
Act 511	267,999,719	3.5	14.3
Special Taxes (Phila. and Pgh.)	55,901,053	0.7	3.0
Delinquent	60,823,499	0.8	3.3
Payment in Lieu of Taxes	2,267,632	0.0	0.1

II. Act 511 Taxes

Type of Tax	Amount	Percent of Total	Number of Districts
Total Taxes	$267,999,719	100.0	502[1]
Wage and Income	162,188,333	60.5	443
Per Capita	19,367,314	7.2	400
Real Estate Transfer	30,768,134	11.5	428
Occupation	39,544,371	14.8	188
Occupation Privilege	7,913,482	2.9	180
Amusement	1,601,508	0.6	48
Mercantile	4,756,215	1.8	40
Trailer	45,042	0.0	7
Mechanical Devices	2,495	0.0	3
Other	1,812,825	0.7	15

[1]502 districts out of 505 districts levy one or more of the Act 511 taxes.

Source: Selected reports of the Department of Education

Table 23

Total Local Taxes Collected for School Purposes in Dollars, Percent and Mills on Market Value 1967-68 to 1976-77[1]

	Total Taxes Collected	Real Estate Taxes Current and Interim	Public Utility Realty	Per Capita Tax (Code)	Act 511 Taxes	Special Taxes for Philadelphia and Pittsburgh	Delinquent Taxes (All Levies)	Payments in Lieu of Taxes
1967-68								
Amount	$ 812,812,947	$ 625,697,452	$ --	$15,409,323	$119,541,991	$22,555,275	$28,029,342	$1,579,564
Percent	100.0	77.0	--	1.9	14.7	2.8	3.4	0.2
Mills on M.V.	19.6	15.1	--	0.4	2.9	0.5	0.7	0.0
1968-69								
Amount	937,065,008	708,238,910	--	15,662,083	137,547,859	44,157,536	29,636,772	1,821,848
Percent	100.0	75.6	--	1.7	14.6	4.7	3.2	0.2
Mills on M.V.	21.7	16.4	--	0.4	3.2	1.0	0.7	0.0
1969-70								
Amount	1,027,224,376	786,190,426	--	14,747,200	149,713,362	48,940,121	24,908,834	1,724,433
Percent	100.0	76.5	--	1.5	14.6	4.8	2.4	0.2
Mills on M.V.	23.1	17.7	--	0.3	3.4	1.1	0.6	0.0
1970-71								
Amount	1,144,820,436	871,107,337	--	15,834,656	165,768,625	58,118,361	32,003,493	1,987,964
Percent	100.0	76.1	--	1.4	14.5	5.0	2.8	0.2
Mills on M.V.	23.9	18.2	--	0.3	3.5	1.2	0.7	0.0
1971-72								
Amount	1,261,153,939	960,137,107	10,387,107	15,934,995	178,412,153	59,593,447	34,375,889	2,313,241
Percent	100.0	76.1	0.8	1.3	14.2	4.7	2.7	0.2
Mills on M.V.	25.4	19.4	0.2	0.3	3.6	1.2	0.7	0.0
1972-73								
Amount	1,331,832,073	1,004,327,985	11,402,253	15,949,039	194,458,562	60,[illegible]4,311	42,919,349	2,290,574
Percent	100.0	75.4	0.9	1.2	14.6	4.5	3.2	0.2
Mills on M.V.	24.4	18.4	0.2	0.3	3.6	1.1	0.8	0.0
1973-74								
Amount	1,427,555,150	1,093,708,512	10,308,556	16,802,469	312,200,198	50,284,688	41,401,492	1,849,235
Percent	100.0	76.6	0.7	1.2	15.0	3.5	2.9	0.1
Mills on M.V.	25.2	19.3	0.2	0.3	3.8	0.9	0.7	0.0
1974-75								
Amount	1,539,204,750	1,187,537,106	10,892,164	16,327,388	226,144,402	52,035,323	44,351,291	1,917,076
Percent	100.0	77.1	0.7	1.1	14.7	3.4	2.9	0.1
Mills on M.V.	23.9	18.4	0.2	0.3	3.5	0.8	0.7	0.0
1975-76								
Amount	1,678,598,335	1,300,617,610	12,042,489	16,377,558	241,460,324	52,379,061	53,671,802	2,049,491
Percent	100.0	77.5	0.7	1.0	14.4	3.1	3.2	0.0
Mills on M.V.	25.0	19.4	0.2	0.2	3.6	0.8	0.8	0.0
1976-77								
Amount	1,870,707,635	1,452,090,899	14,681,906	16,942,927	267,999,719	55,901,053	60,823,499	2,267,632
Percent	100.0	77.6	0.8	0.9	14.3	3.0	3.3	0.1
Mills on M.V.	24.3	18.9	0.2	0.2	3.5	0.7	0.8	0.0

[1]Data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 24

Amount of Local, State and Federal Support for the Public Schools of Pennsylvania Based on Total Expenditures of the General Funds of the School Districts Plus County, State and Federal Expenditures not Included in the General Funds[1]

School Year Ending	Total Expenditures	Local	Percent	State	Percent	Federal	Percent
1967	$1,526,850,422	$ 809,234,658	53.0	$ 611,620,104	40.1	$105,995,660	6.9
1968	1,691,836,536	826,020,325	48.9	751,781,775	44.4	114,034,436	6.7
1969	1,926,339,337	970,145,087	50.4	834,541,165	43.3	121,653,085	6.3
1970	2,203,706,154	1,058,224,419	48.1	1,030,254,431	46.7	115,227,304	5.2
1971	2,448,390,211	1,182,218,804	48.3	1,115,375,467	45.5	150,795,940	6.2
1972	2,736,702,502	1,240,187,444	45.3	1,315,738,144	48.1	180,776,914	6.6
1973	2,996,611,167	1,286,694,068	42.9	1,459,456,200	48.7	250,460,899	8.4
1974	3,284,323,972	1,472,659,350	44.8	1,537,264,464	46.8	274,400,158	8.4
1975	3,651,509,166	1,608,371,925	44.0	1,741,794,518	47.7	301,342,723	8.3
1976	3,963,472,913	1,772,332,685	44.7	1,859,377,624	46.9	331,762,606	8.4
1977	4,211,719,998	2,007,416,155	47.7	1,857,846,532	44.1	346,457,311	8.2

[1]Data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 25

Expenditures from the General Fund of Administrative Units by Function, 1967-68 to 1976-77

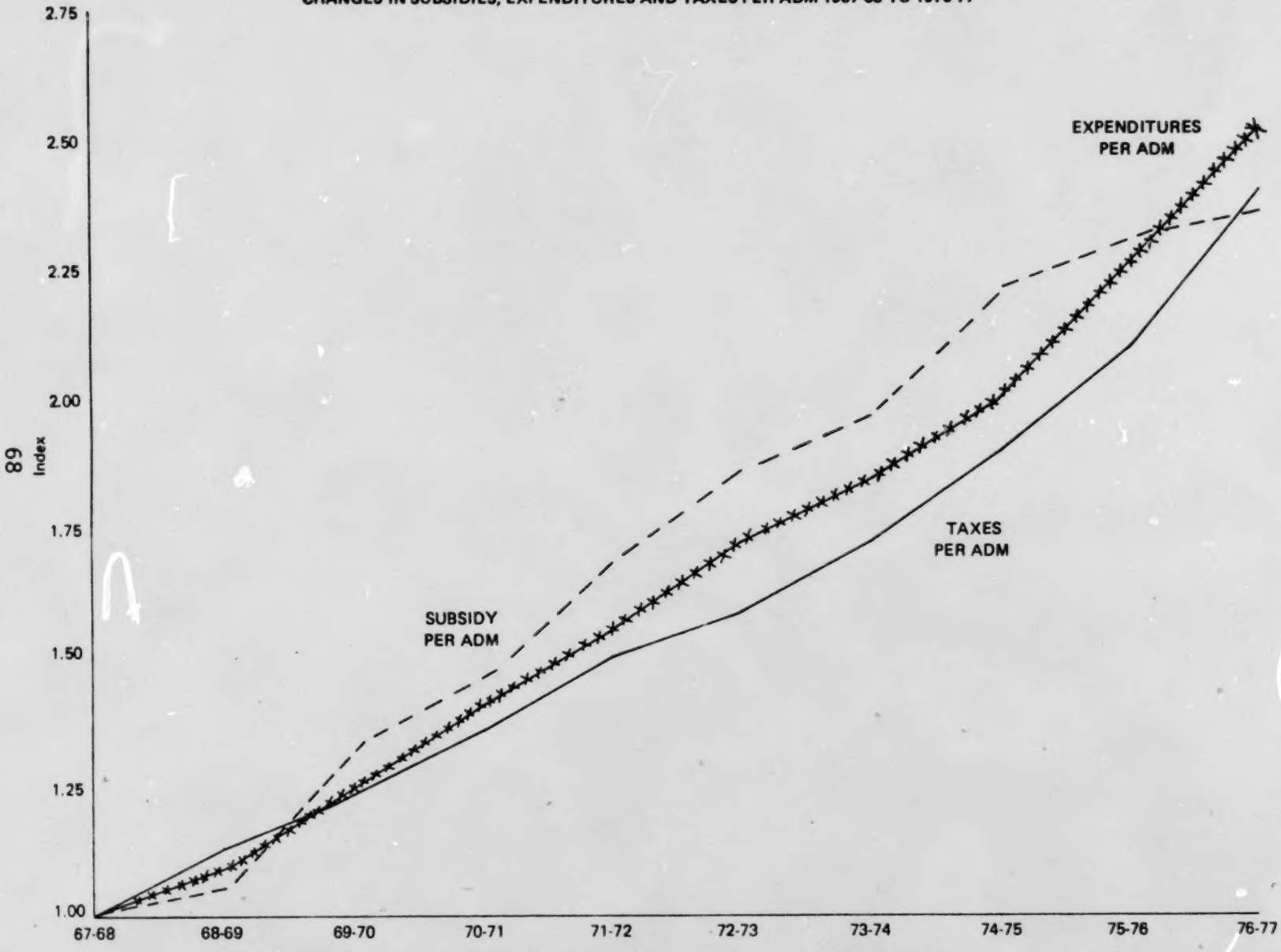
	Total Expenditures	Total Current Expenditures	Current Expenditures: Administration	Instruction	Attendance Services	Pupil Personnel Services 1/	Health Services	Pupil Transportation 2/
1967-68								
Amount	$1,576,584,494	$1,368,663,127	$ 61,500,715	$ 937,451,615	$4,923,161	$	$21,998,156	$ 56,714,835
Percent	100.0	86.8	4.0	59.5	0.3	--	1.4	3.6
1968-69								
Amount	1,789,473,376	1,558,064,799	71,444,744	1,067,119,556	6,288,151	--	24,508,111	62,218,327
Percent	100.0	87.1	4.0	59.4	0.3	--	1.4	3.5
1969-70								
Amount	2,051,913,202	1,785,410,867	76,635,440	1,175,917,973	1/	45,886,109	27,571,666	69,900,536
Percent	100.0	87.0	3.7	57.3		2.2	1.4	3.4
1970-71								
Amount	2,278,310,949	1,966,917,607	83,605,392	1,271,198,464	1/	52,257,525	29,637,154	77,269,783
Percent	100.0	86.3	3.7	55.8		2.3	1.3	3.4
1971-72								
Amount	2,531,093,677	2,192,348,191	91,610,950	1,445,273,472	1/	61,586,484	33,306,005	85,711,735
Percent	100.0	86.6	3.6	57.1		2.4	1.3	3.4
1972-73								
Amount	2,725,204,624	2,344,759,910	95,815,415	1,506,483,950	1/	65,836,036	34,162,451	94,742,678
Percent	100.0	86.0	3.5	55.3		2.4	1.2	3.5
1973-74								
Amount	2,907,039,536	2,512,038,769	97,998,661	1,595,781,494	1/	71,567,859	35,461,579	111,588,250
Percent	100.0	86.4	3.4	54.9		2.5	1.2	3.8
1974-75								
Amount	3,195,138,660	2,780,437,775	106,413,702	1,724,997,008	1/	78,045,667	37,377,129	134,874,056
Percent	100.0	87.0	3.3	54.0		2.5	1.2	4.2
1975-76								
Amount	3,434,830,745	3,021,597,567	113,905,325	1,854,272,084	1/	84,917,871	38,889,109	148,850,303
Percent	100.0	88.0	3.3	54.0		2.5	1.1	4.3
1976-77								
Amount	3,637,477,403	3,219,518,955	122,530,095	1,941,113,972	1/	87,583,576	39,363,765	159,587,334
Percent	100.0	88.5	3.4	53.4		2.4	1.1	4.4

	Current Expenditures: Operation and Maintenance of Plant	Fixed Charges	Food Services	Student-Body Activities	Community Services	Expenditures Not Distributed by Function	Debt Service	Capital Outlay
1967-68								
Amount	$158,087,340	$ 83,257,265	$ 4,282,993	$ 7,186,506	$ 8,405,273	$22,855,268	$178,262,970	$29,658,397
Percent	10.0	5.3	0.3	0.5	0.5	1.4	11.3	1.9
1968-69								
Amount	175,079,680	100,820,847	6,064,915	8,410,661	9,137,514	31,922,393	202,424,340	28,984,237
Percent	9.8	5.6	0.3	0.5	0.5	1.8	11.3	1.6
1969-70								
Amount	201,516,237	122,443,802	6,691,372	15,512,777	9,798,916	33,536,039	231,135,252	35,367,083
Percent	9.8	6.0	0.3	0.8	0.5	1.6	11.3	1.7
1970-71								
Amount	233,433,674	141,034,671	8,117,704	17,942,416	10,987,270	41,433,554	269,000,758	42,392,584
Percent	10.2	6.2	0.3	0.8	0.5	1.8	11.8	1.9
1971-72								
Amount	266,031,825	168,491,778	8,311,908	20,875,120	11,148,914	--	301,771,509	36,973,977
Percent	10.5	6.7	0.3	0.8	0.5		11.9	1.5
1972-73								
Amount	304,549,565	196,142,679	10,018,309	24,127,288	12,881,539	--	328,623,120	51,821,594
Percent	11.2	7.2	0.3	0.9	0.5	--	12.1	1.9
1973-74								
Amount	327,423,750	222,403,387	9,743,154	27,491,703	12,578,932	--	340,865,168	54,135,599
Percent	11.3	7.7	0.3	0.9	0.4	--	11.7	1.9
1974-75								
Amount	389,310,057	252,898,312	10,101,784	33,203,405	13,216,655	--	359,247,378	55,453,507
Percent	12.2	7.9	0.3	1.0	0.4	--	11.3	1.7
1975-76								
Amount	412,996,286	307,532,799	9,293,589	37,508,567	13,431,634	--	365,318,606	47,914,572
Percent	12.0	9.0	0.3	1.1	0.4	--	10.6	1.4
1976-77								
Amount	443,029,524	363,649,564	9,741,633	40,254,394	12,728,098	--	380,563,758	37,331,690
Percent	12.2	10.0	0.3	1.0	0.3	--	10.5	1.0

1/ Attendance services and guidance services were combined to form pupil personnel services. Guidance services were included in instruction prior to 1969-70. Our Schools Today, Public School Financial Statistics Report series, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

2/ Does not include intermediate unit costs.

FIGURE 35
CHANGES IN SUBSIDIES, EXPENDITURES AND TAXES PER ADM 1967-68 TO 1976-77



Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

Classroom teacher salaries are of course an important part of the expenditures picture. Table 26 reflects changes, over time, in the amount and proportion salaries are of current and instructional expenditures. Interestingly enough, they have been dropping as a proportion of the current or the instructional expenditure and even on a short-term basis (Figure 36) we see a gradual drop.

Pupil Transportation

As indicated earlier in Table 25, the cost of pupil transportation has increased sharply in recent years, from $56,714,835 in 1967-68 to $159,587,334 in 1976-77. This nearly three-fold increase has been due both to an increasing use of transportation (including nonpublic pupils) and to the increased costs of fuel and maintenance.

At this point it might be desirable to take a closer look at transportation expenditures and related data. Table 27, for example, breaks down the expenditure for recent years (1972-73 to 1976-77) in order to give some picture of where the growth in expenditures has been taking place. Obviously, insurance, salary increases and the use of contracted and other nonpublic carriers has been responsible for much of the increase.

Table 28 gives a picture of the number of vehicles in use in Pennsylvania, their age, the total number of miles the vehicles were driven and the average number of miles each vehicle was driven.

Figure 37 graphically portrays the data of Table 27 using the last two years of transportation expenditures. Figure 37 also breaks the expenditures down by source (federal, state and local) for these two years. Figure 38 then shows the number of vehicles in daily use by number of passengers carried by contracted or district-owned vehicles.

Figure 39 similarly indicates the total mileage of these vehicles broken down again by contracted and district-owned and according to the number of passengers carried by a vehicle.

Table 29 indicates the number of pupils carried between 1967-68 and 1976-77 by level, and whether public or nonpublic schools, as well as overall. As can be seen in Table 29, the increases are the greatest for nonpublic pupils, particularly secondary nonpublic students.

Figure 40 attempts to give a picture of the number of pupils transported at public expense versus non-reimburseable costs, i.e., costs for transportation over distances of less than one and one-half miles. The data are broken down by public and nonpublic pupils and by level (elementary and secondary) for the years 1975-76 and 1976-77.

School Plant Expenditures

At this point, it seems appropriate to look at a physical plant as one aspect of costs and as a significant part of the educational enterprise. Table 30, for example, gives the dollar amount and the growth index (1969-70 base year) for the capital outlay costs of school plants completed and made available during each of the years shown (1969-70 to 1976-77).

Table 26

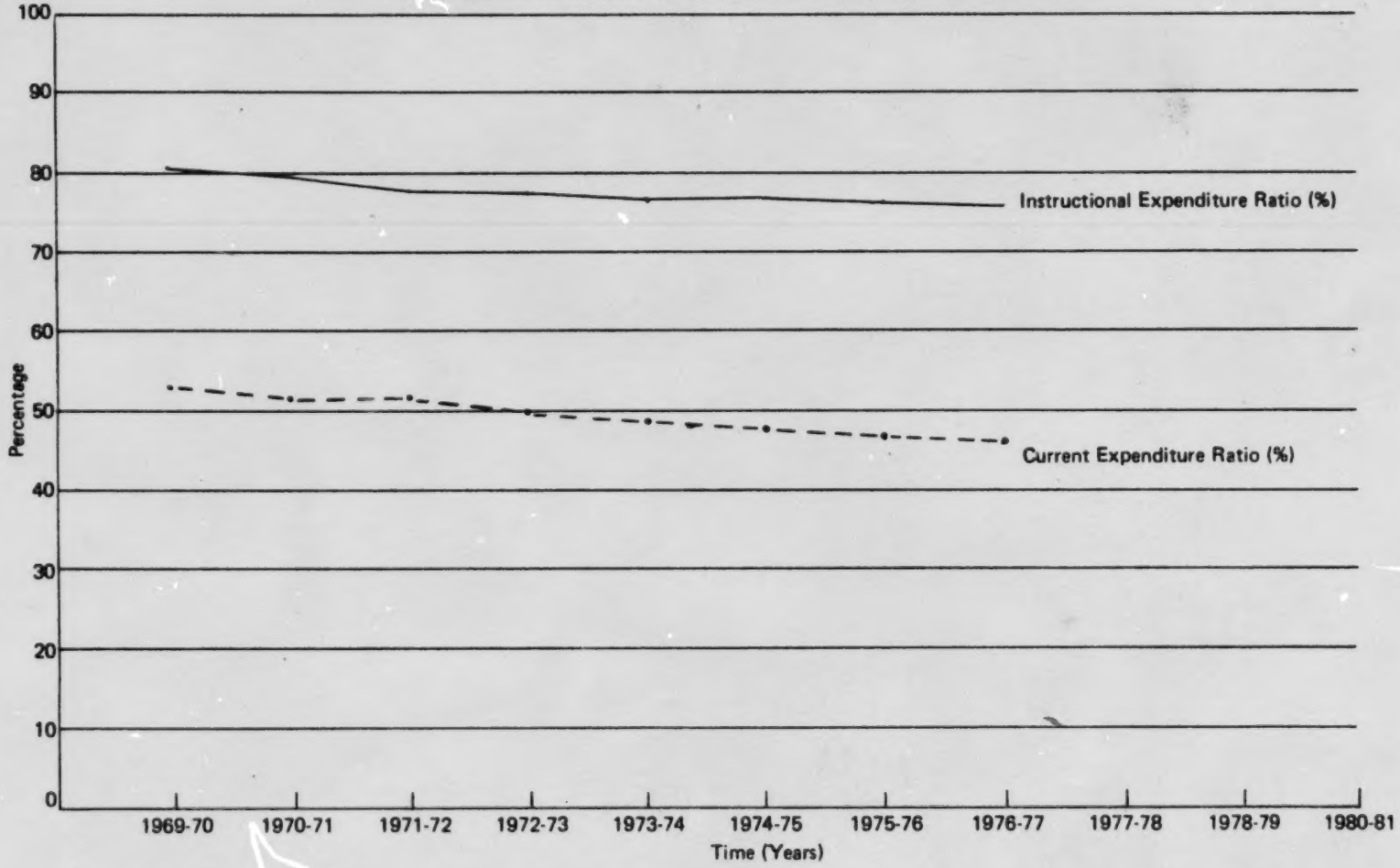
Ratio of Classroom Teachers' Salaries to Current Expenditures and Instructional Expenditures for Selected Years (Thousands)

School Year	Current Expenditures	Instructional Expenditures	Salaries of Classroom Teachers	Percent Salaries Are of Current Expenditures	Percent Salaries Are of Instructional Expenditures
1939-40	$ 153,099	$ 112,179	$ 96,164	62.8	85.7
1949-50	282,021	193,890	165,767	58.8	85.5
1959-60	680,983	476,112	393,278	57.8	82.6
1969-70	1,785,411	1,175,918[1]	950,369	53.2	80.8
1970-71	1,966,918	1,271,198	1,022,641	52.0	80.4
1971-72	2,192,348	1,445,273	1,133,576	51.7	78.4
1972-73	2,344,760	1,506,484	1,169,413	49.9	77.6
1973-74	2,512,039	1,595,781	1,235,475	49.2	77.4
1974-75	2,780,438	1,724,997	1,326,034	47.7	76.9
1975-76	3,021,598	1,854,272	1,420,564	47.0	76.6
1976-77	3,219,582	1,941,114	1,483,919	46.1	76.4

[1]Beginning in 1969-70 salaries of guidance personnel are no longer included in instructional expenditures.

Source: Compiled from the "Annual Financial Report" by the Division of Education Statistics, Department of Education.

FIGURE 36
CLASSROOM TEACHER SALARY EXPENDITURES ON A PERCENTAGE OF CURRENT AND INSTRUCTIONAL EXPENDITURES FOR SELECTED YEARS[1]



[1]Based upon data compiled from the "Annual Financial Report" series of the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 27

A Breakdown of Transportation Expenditures for Pennsylvania's Public and Private Schools, 1972-73 Through 1976-77[1] (in Thousands)

	1972-73	1973-74	1974-75	1975-76	1976-77	% Change (1972-77)
Total Expenditures	$98,075	$118,106	$141,038	$154,357	$165,989	69.2
Salaries	20,626	23,479	28,082	30,243	32,551	57.8
Insurance	1,116	1,034	1,276	1,657	1,852	65.9
Replacement of Vehicles	3,534	2,942	5,106	5,374	4,532	28.2
Contracted Carriers	63,971	76,352	89,889	101,359	109,916	71.8
Public Carriers	2,429	3,480	4,872	3,243	3,783	55.7
Other Transportation	6,400	10,819	11,813	12,480	13,354	108.7

[1]Derived from data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education. Includes intermediate unit costs. Total costs are therefore higher than in Table 25.

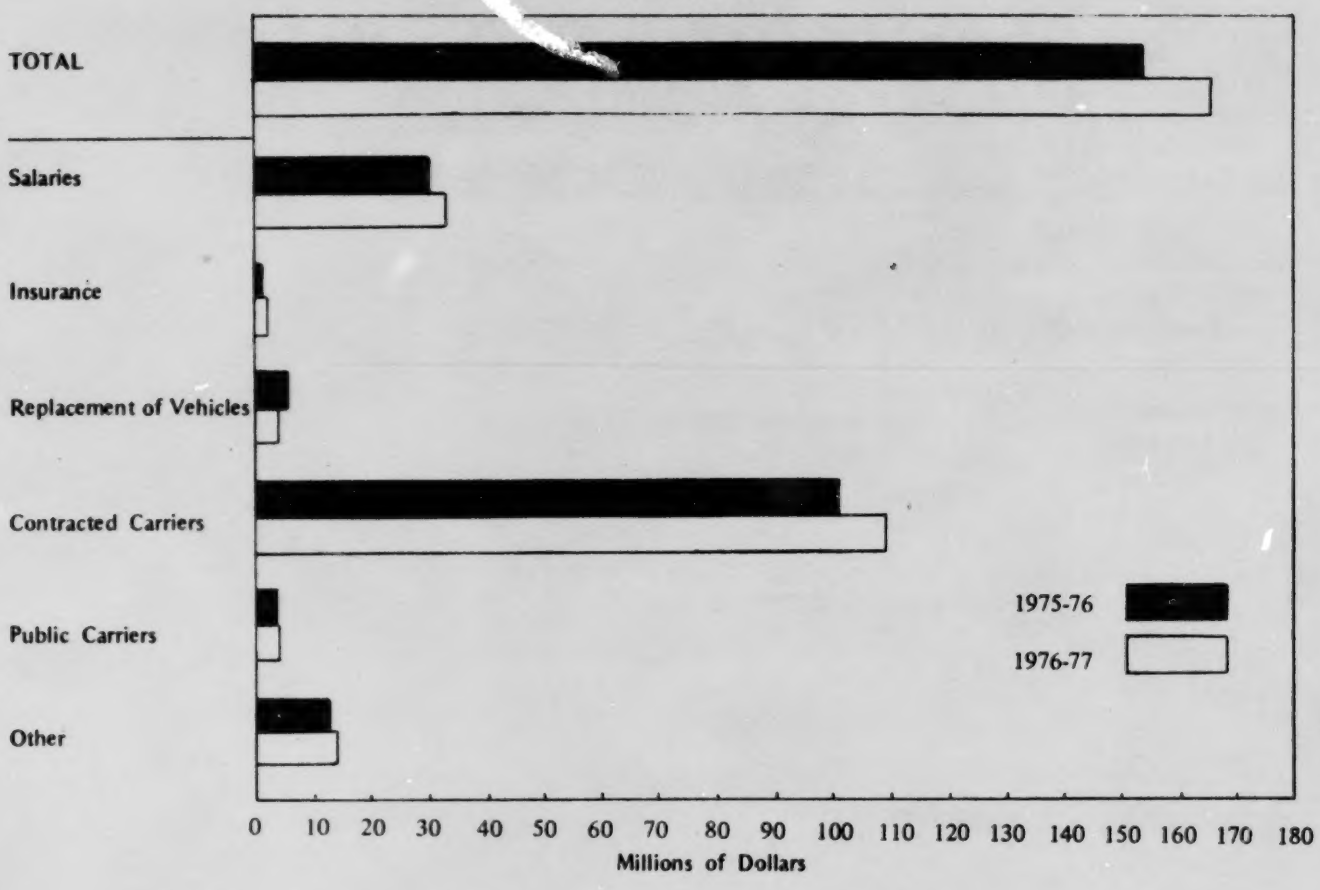
Table 28

Selected Statistics on Vehicles in Use for the Transportation of School Pupils in Pennsylvania, 1972-73 Through 1975-76[1]

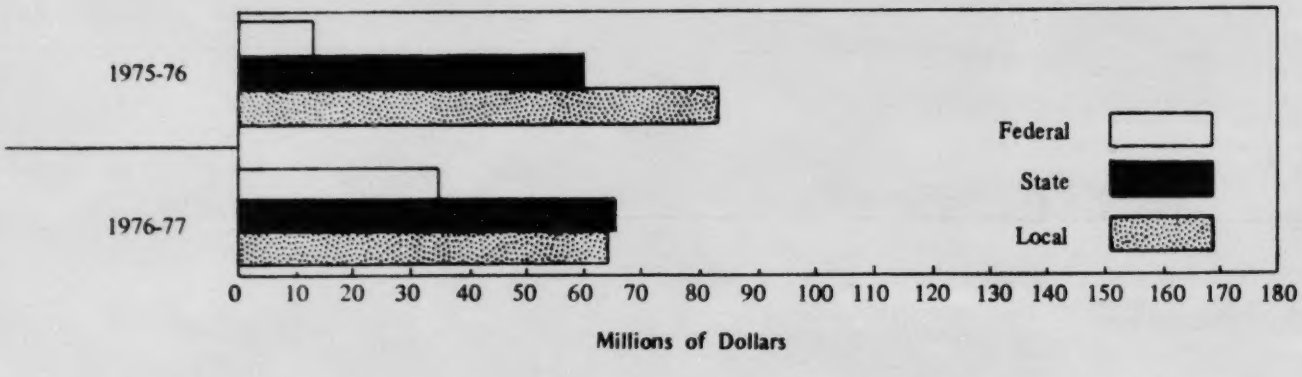
	1972-73	1973-74	1974-75	1975-76	% Change (1972-76)
Age of Vehicle (Years)					
Less than 5	7,567 (51.2%)	9,087 (53.1%)	9,521 (53.3%)	9,740 (53.4%)	28.7
5 - 10	6,178 (41.8%)	6,880 (40.2%)	7,051 (39.5%)	7,096 (38.9%)	14.9
More than 10	1,040 (7.0%)	1,158 (6.7%)	1,276 (7.2%)	1,414 (7.7%)	36.0
Total No. of Vehicles	14,785 (100.0%)	17,125 (100.0%)	17,848 (100.0%)	18,250 (100.0%)	23.4
Total Miles Driven	159,539,990	181,349,497	193,313,024	202,503,753	26.9
Avg. Miles per Vehicle	10,790.7	10,589.8	10,831.1	11,096.1	

[1]Derived from data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 37
TRANSPORTATION EXPENDITURES BY CATEGORY AND SOURCE
1975-76 AND 1976-77

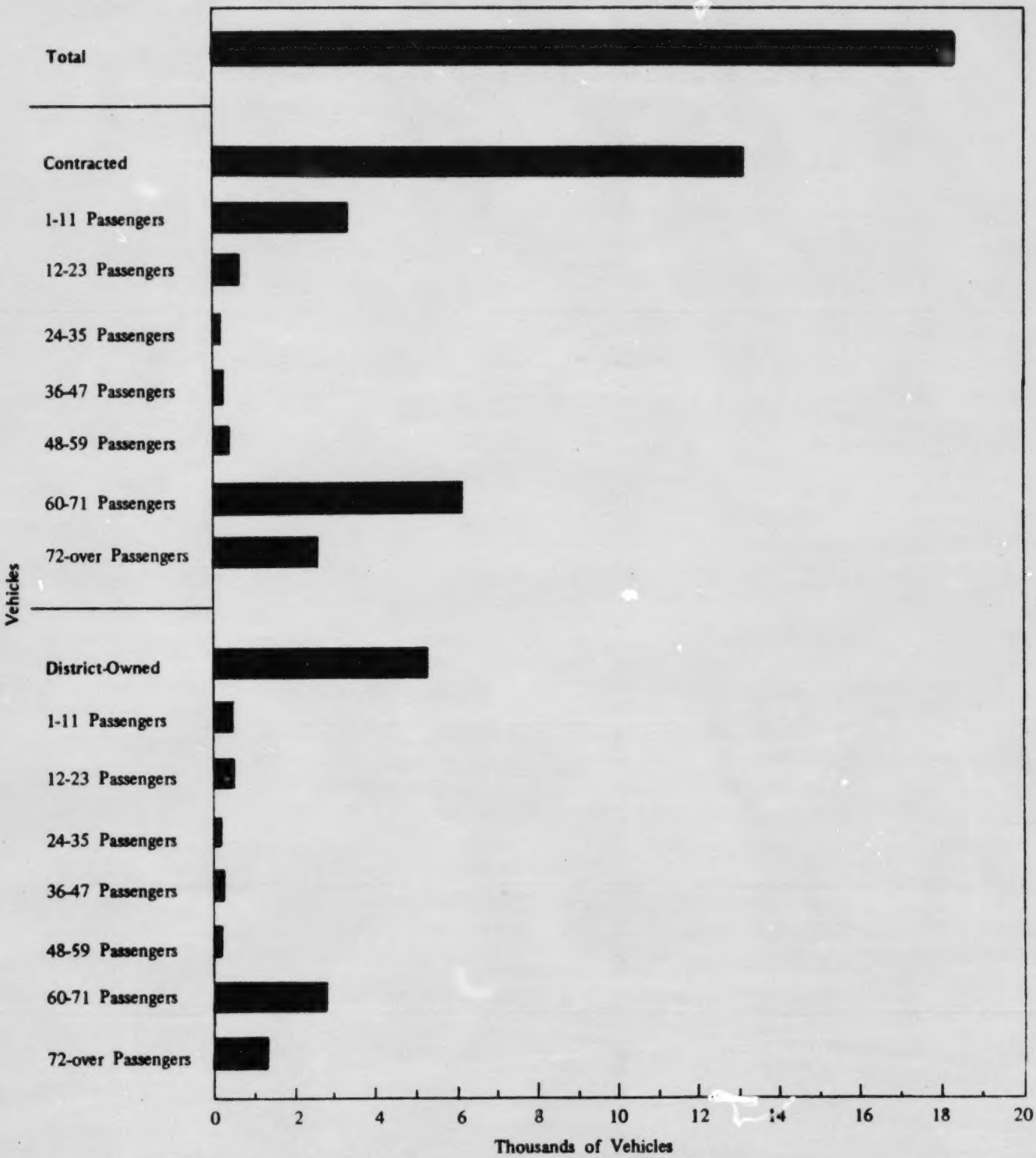


FEDERAL, STATE AND LOCAL SOURCES FOR TRANSPORTATION EXPENDITURES
1975-76 AND 1976-77



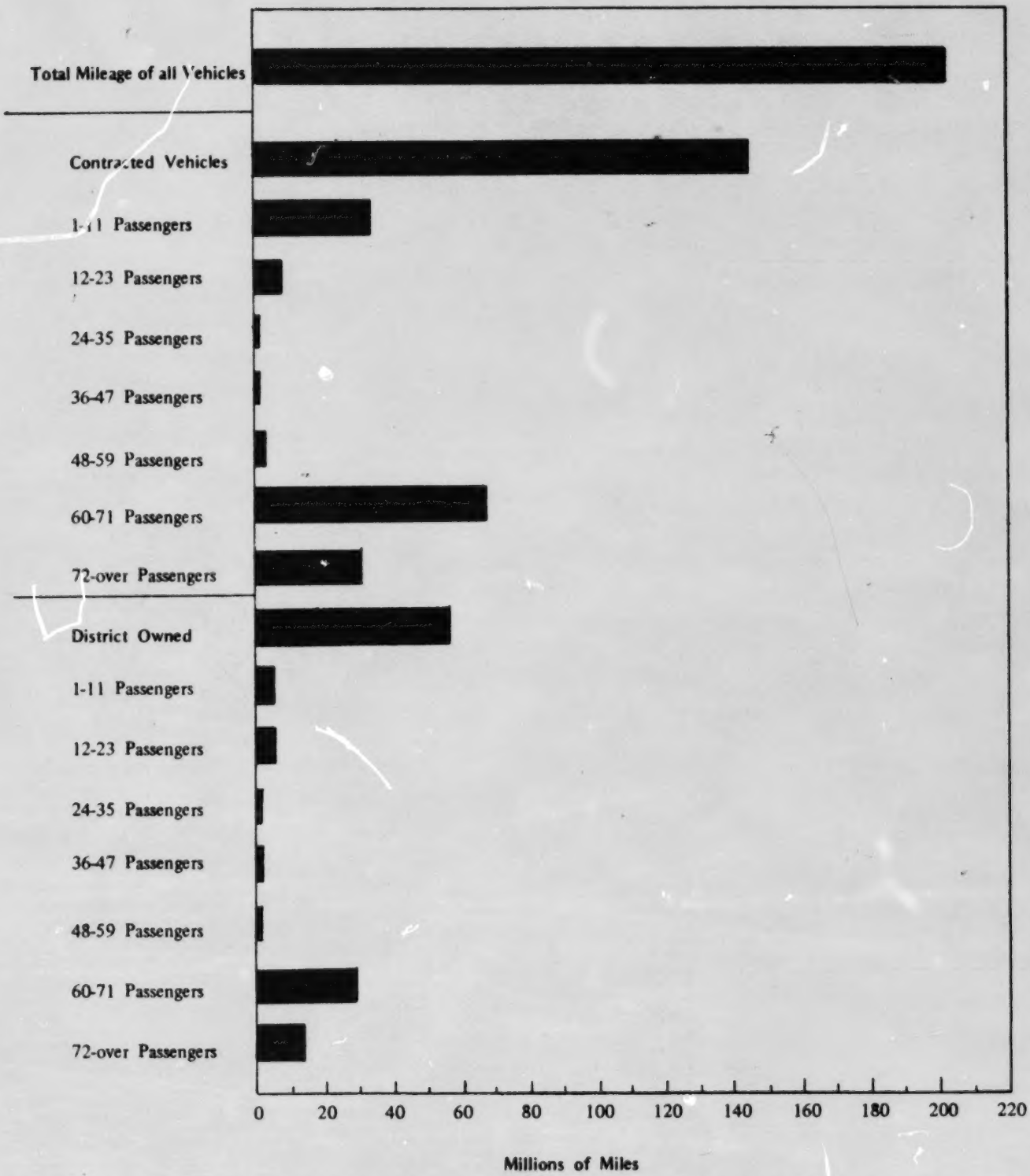
Figures are taken from Our Schools Today: Transportation Report 1975-76 and 1976-77 (Vol. 17, No. 2), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 38
VEHICLES IN DAILY USE ON ESTABLISHED ROUTES
1975-76



Figures are taken from Our Schools Today: Transportation Report 1975-76 and 1976-77 (Vol. 17, No. 2), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 39
ANNUAL MILEAGE OF VEHICLES IN DAILY USE ON ESTABLISHED ROUTES
1975-76



Figures are taken from Our Schools Today: Transportation Report 1975-76 and 1976-77 (Vol. 17, No. 2), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 29

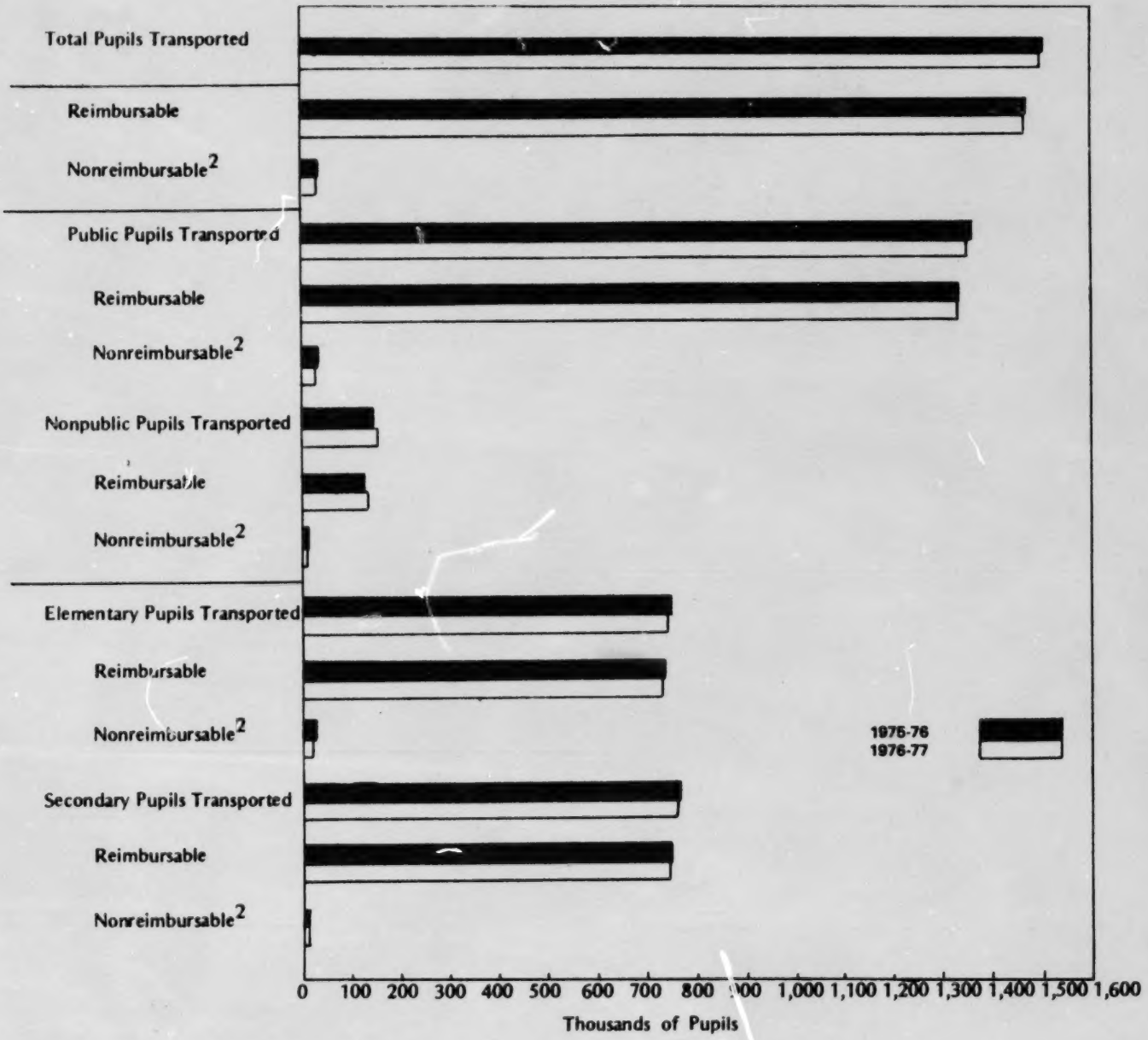
Total Pupils Transported by Level 1967-68 Through 1976-77[1]
(in Thousands)

Category of Pupil	School Year[2]										1967-68 to 1976-77 % Change
	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	
Public Pupils Transported	1,146	1,192	1,229	1,261	1,291	1,341	1,352	1,350	1,360	1,350	17.8
Elementary	573	594	604	609	619	635	642	643	639	633	10.5
Secondary	573	598	626	652	672	706	710	707	720	717	25.1
Nonpublic Pupils Transp.	88	85	84	78	73	67	133	144	154	158	79.5
Elementary	71	68	65	60	54	50	92	99	103	106	49.3
Secondary	17	18	19	19	19	17	41	45	51	52	205.8
Total Pupils Transported	1,234	1,277	1,313	1,339	1,364	1,408	1,485	1,495	1,513	1,508	22.2
Elementary	644	662	669	669	673	685	734	742	742	739	14.8
Secondary	590	616	644	671	691	724	751	753	771	769	30.3

[1]Based on transportation report issues of Our Schools Today published by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2]The total of the elementary and secondary figures may not equal the total shown due to rounding the entries to the nearest thousand.

FIGURE 40
NUMBER OF PUBLIC AND NONPUBLIC PUPILS TRANSPORTED
AT PUBLIC EXPENSE, 1975-76 AND 1976-77 [1]



[1] Figure taken from Our Schools Today: Transportation Report 1975-76 and 1976-77 (Vol. 17, No. 2), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2] Nonreimbursable costs are those in which the pupil has been transported under 1½ miles (elementary), 2 miles (secondary) unless subject to special conditions such as hazardous walking conditions or enrollment in either an Area Voc-Tech School or a special education class.

Table 30

Capital Outlay Cost of School Plants Completed and Made Available During the Year Indexed From 1969-70[1]

	Total	Cost of New Sites and Additions to Sites	Cost of New Buildings	Cost of Additions to Buildings	Cost of Remodeling Buildings	Cost of Equipment & Furniture	Others (Financing Costs, etc.)
1969-70	$406,658,821	$13,299,189	$275,969,700	$43,113,000	$19,723,024	$30,596,397	$23,957,511
Index	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1970-71	272,989,179	9,399,038	158,214,150	48,570,003	17,641,019	25,166,003	13,998,966
Index	0.67	0.71	0.57	1.13	0.89	0.82	0.58
1971-72	293,535,012	12,226,611	184,644,930	29,671,018	21,751,951	31,613,919	13,626,583
Index	0.72	0.92	0.67	0.69	1.10	1.03	0.57
1972-73	266,416,258	9,092,523	174,969,703	22,650,187	15,174,293	29,912,181	14,617,371
Index	0.66	0.68	0.63	0.52	0.77	0.98	0.61
1973-74	239,807,149	8,004,907	139,209,417	40,297,747	16,562,066	27,023,683	8,709,329
Index	0.59	0.60	0.50	0.93	0.84	0.88	0.36
1974-75	325,111,076	12,494,030	193,352,317	40,807,782	33,466,420	33,693,849	11,296,678
Index	0.80	0.94	0.70	0.95	1.70	1.10	0.47
1975-76	294,728,092	10,053,599	178,005,186	32,235,736	34,517,039	30,728,076	9,188,456
Index	0.72	0.76	0.64	0.75	1.75	1.00	0.38
1976-77	248,722,520	9,472,549	142,826,138	31,254,200	32,210,543	23,415,051	9,544,039
Index	0.61	0.71	0.52	0.72	1.63	0.76	0.40

[1] Fall Report on Capital Outlay and Assignment Area of New Employes, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

It is clear that a considerable increase in costs (63 percent) for remodeling older buildings occurred during this period, while expenditures for new buildings and additions to older buildings fell off to figures 50 to 70 percent lower than the base year expenditures of 1969-70. In general, emphasis on new plant construction seems to be diminishing in the 1970s as a response to declining enrollments.

Table 31 attempts to summarize some salient facts about Pennsylvania's public school buildings in terms of their number, their general physical condition, the total number of classrooms involved, the number of pupils per building and per classroom from 1968-69 to 1977-78.

Figure 41 indicates changes in the proportion of elementary, secondary and combined public school buildings for the years 1960, 1972 and 1977. As can be seen, the number of elementary schools has declined and their share has fallen from 72.2 percent to 65 percent since 1960. The number of secondary schools has decreased slightly but, on a percentage basis, they now represent 24.9 percent of the schools, rather than the 22.2 percent of 1960. The combined elementary and secondary school building has, interestingly enough, increased both in number and in proportion, i.e., from 256 to 407 and from 5.6 percent to 10.1 percent, as a result of the implementation of the middle school concept in recent years. Much of this change involved incorporation of elementary classes in an existing high school building rather than new construction.

Figure 42 indicates changes in the number and proportion of classrooms for each for each level. Here we see a rise and then a decline in the number of elementary classrooms, with a consistent overall decline in their proportion.

The number of secondary classrooms has risen between 1960 and 1977 with the proportion remaining about the same. In the case of the combined (middle school) classrooms there has been a doubling in their number with a concommitant rise in proportion from 7.6 percent to 13.3 percent between 1968 and 1977.

The question often arises of course, as to how satisfactory is the physical plant (building). Figure 43 shows the changes in the proportion of buildings rated as satisfactory, fair or poor. Figure 43 suggests that there has been an upgrading of the school buildings in Pennsylvania through remodeling and new construction replacing old buildings.

Costs Per Pupil

Table 32 gives an idea of total expenditures and current expenditures converted into a cost per pupil equivalent using the ADM as the divisor and in Table 33 we see that there has been an almost three-fold increase in expenditures. Much of this has been due to increasing inflation, since constant (uninflated) dollar amounts expended per pupil have not increased proportionately while inflated current dollar expenditures per pupil have exceeded the overall expenditure percentage increase, i.e., 142 percent compared with 123.7 percent.

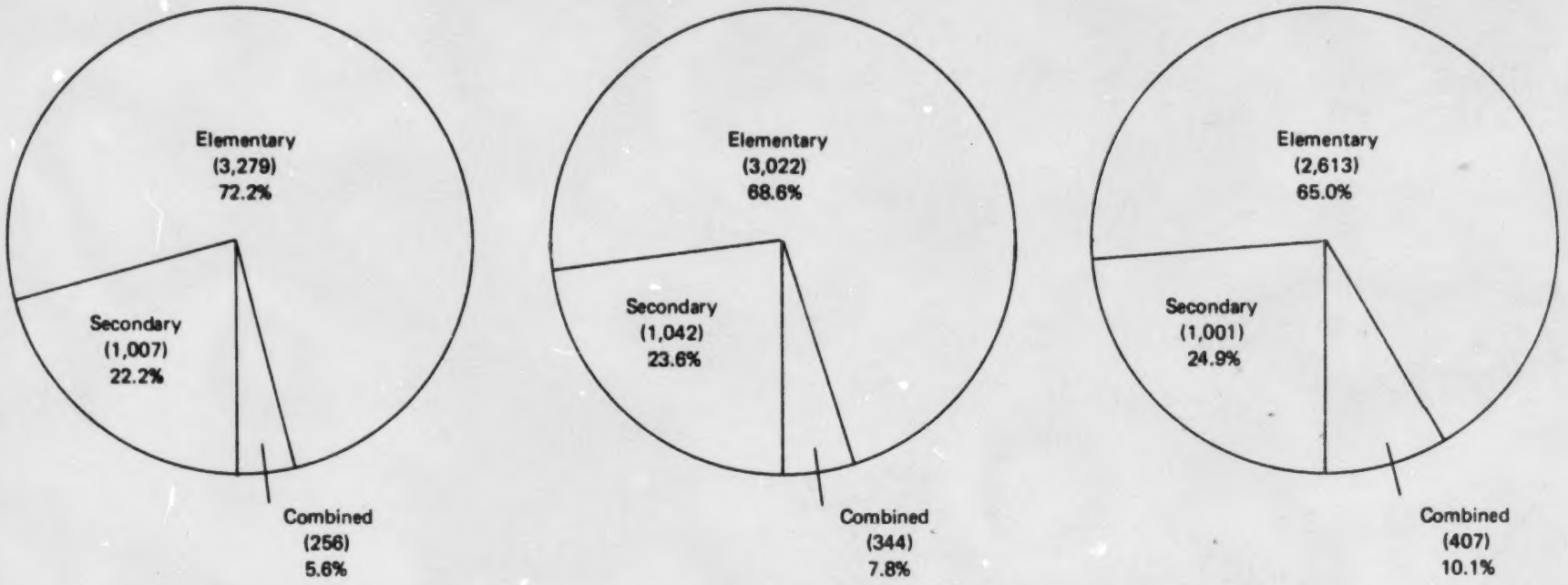
Table 31

Selected Statistics Related to Public School Buildings and Their Use in Pennsylvania 1968 to 1977[a]

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Total Buildings	4,542	4,520	4,507	4,464	4,408	4,350	4,296	4,227	4,127	4,021
	%	%	%	%	%	%	%	%	%	%
Elementary	72.2	71.3	70.6	69.9	68.6	67.6	66.7	66.0	65.7	65.0
Secondary	22.2	22.6	23.0	23.3	23.6	23.9	24.2	24.7	24.5	24.9
Combined	5.6	6.1	6.4	6.8	7.8	8.5	9.1	9.3	9.8	10.1
Ratings of Buildings										
	%	%	%	%	%	%	%	%	%	%
Satisfactory	79.7	80.1	81.2	81.8	82.7	83.6	84.6	85.6	86.6	87.3
Fair	15.3	15.2	14.5	14.5	13.8	13.3	12.8	12.2	11.5	10.9
Unsatisfactory	5.0	4.7	4.3	3.7	3.4	3.1	2.6	2.2	1.9	1.8
Total Classrooms	87,021	89,054	91,389	93,518	95,474	97,200	98,307	98,930	98,829	98,028
	%	%	%	%	%	%	%	%	%	%
Elementary	50.1	49.0	48.4	48.0	47.0	46.0	45.3	44.8	44.4	44.0
Secondary	42.3	42.5	42.6	42.3	42.5	42.5	42.4	42.8	42.7	42.7
Combined	7.6	8.5	9.0	9.7	10.5	11.5	12.3	12.4	12.8	13.3
Pupils Per Building										
Elementary	360.6	358.9	395.5	359.6	363.3	360.7	357.1	356.7	353.8	357.7
Secondary	955.8	978.8	987.7	988.9	1,003.3	1,010.2	989.9	981.5	991.6	982.3
Combined	640.0	692.2	695.8	732.9	695.7	688.8	685.9	667.7	648.6	635.6
Pupils Per Classroom										
Elementary	27.1	26.5	25.9	25.0	24.5	23.7	23.0	22.5	21.8	21.6
Secondary	26.1	26.4	26.2	26.0	25.8	25.5	24.7	24.2	23.8	23.5
Combined	24.7	25.2	24.7	24.5	24.0	22.9	22.2	21.5	20.6	19.9

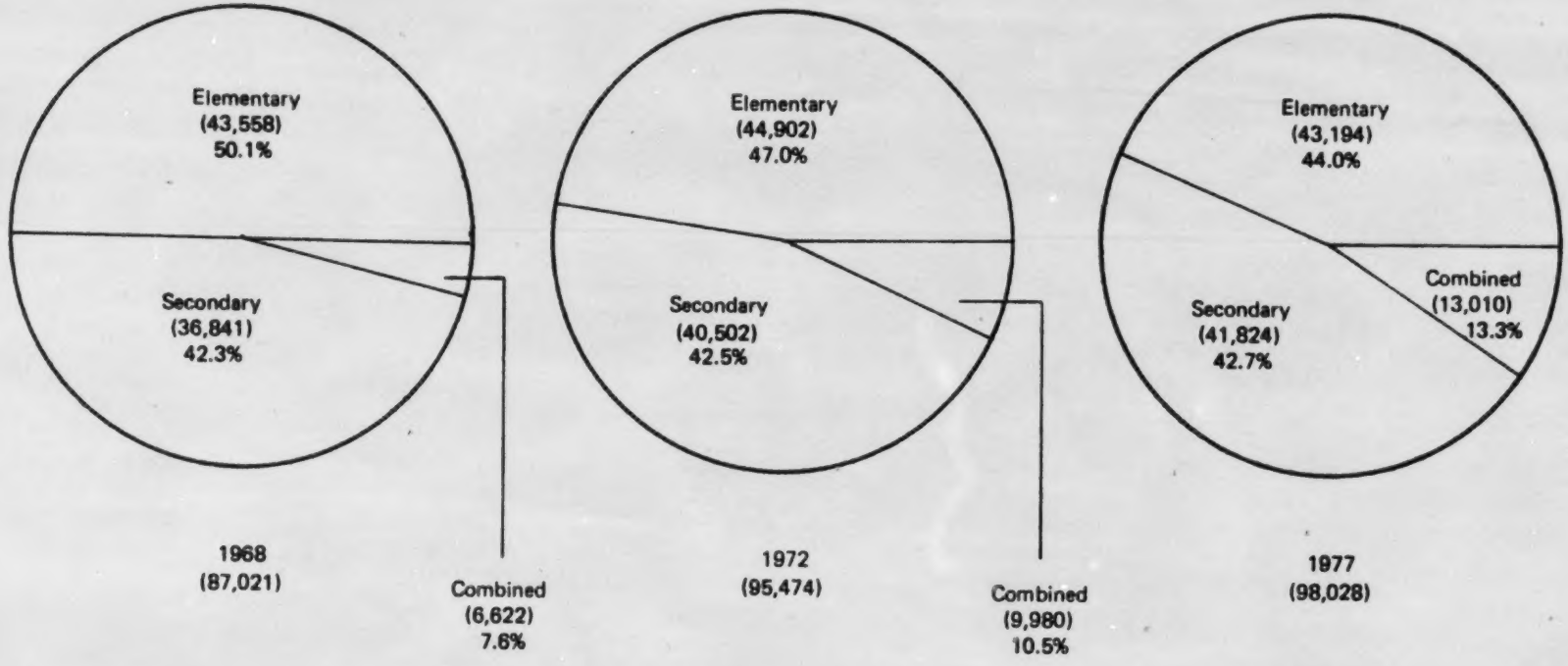
[a]Based upon data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 41
CHANGE IN NUMBER AND PROPORTION OF EACH TYPE OF PUBLIC SCHOOL BUILDING OVER THREE SELECTED YEARS[1]



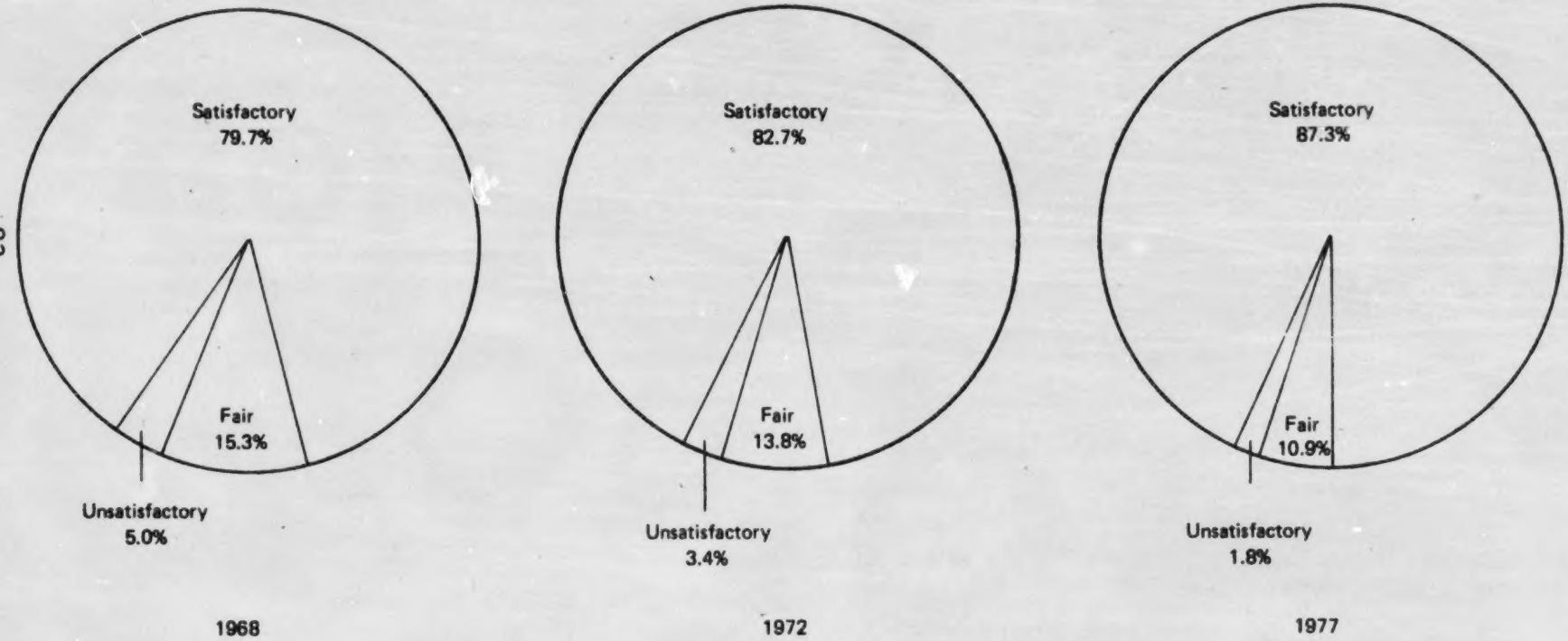
[1]Data from Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 42
CHANGE IN NUMBER AND PROPORTION OF CLASSROOMS FOR EACH TYPE OF BUILDING OVER SELECTED YEARS[1]



[1]Based on data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

FIGURE 43
CHANGE IN RATINGS OF PUBLIC SCHOOL BUILDINGS OVER TIME[1]



[1]Based on data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 32

Average Cost Per Pupil in the Public Schools of Pennsylvania
Based on General Fund Expenditures of School Districts

School Year	Expenditures		Expenditure Per Pupil[1]			
			Total		Current	
	Total	Current	In Average Daily Membership	In Average Daily Attendance	In Average Daily Membership	In Average Daily Attendance
1959-60	$ 820,591,788	$ 680,982,703	$ 432.02	$ 458.69	$ 358.52	$ 380.66
1960-61	863,438,882	732,656,442	446.31	473.09	378.70	401.43
1961-62	931,966,705	773,317,625	471.05	500.36	390.86	415.18
1962-63	971,797,879	817,109,284	476.10	506.53	400.32	425.90
1963-64	1,048,508,888	884,219,309	498.06	528.21	420.02	445.44
1964-65	1,147,058,333	965,696,687	537.98	570.13	452.92	479.98
1965-66	1,240,598,079	1,066,335,120	575.84	612.04	494.96	526.07
1966-67	1,421,687,788	1,229,370,384	647.23	687.40	559.67	594.41
1967-68	1,576,584,494	1,368,663,127	702.74	747.27	610.06	648.72
1968-69	1,789,473,376	1,558,064,799	783.02	839.12	681.76	730.61
1969-70	2,051,913,202	1.785,410,867	888.58	953.05	773.17	829.27
1970-71	2,278,310,949	1,966,917,607	980.82	1,057.08	846.76	912.60
1971-72	2,531,093,677	2,192,348,191	1,089.20	1,170.73	943.43	1,014.05
1972-73	2,725,204,624	2,344,759,910	1,176.08	1,278.48	1,011.90	1,100.00
1973-74	2,907,039,536	2,512,038,769	1,282.82	1,392.23	1,108.52	1,203.06
1974-75	3,195,138,660	2,780,437,775	1,438.68	1,555.67	1,251.95	1,353.76
1975-76	3,434,830,745	3,021,597,567	1,570.76	1,697.06	1,381.79	1,492.89
1976-77	3,637,477,403	3,219,581,955	1,703.68	1,848.08	1,507.95	1,635.76

[1]Excludes pupils in county or intermediate unit operated classes for all years and pupils in state college laboratory schools beginning in 1964-65. Statistical Report of the Secretary of Education, 1976-77, Table 59, Bureau of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

Table 33

Trend in Current Public School Expenditures and Expenditures Per Pupil Expressed in Current and in Constant Uninflated 1968 Dollars[1]

Year	Current $ Expenditures (Millions)	Constant $ Expenditures[2] (Millions)	Current $ Per Pupil[3]	Constant $ Per Pupil[3]
1968-69	$1,558	$1,558	$ 682	$ 682
1969-70	1,785	1,694	773	734
1970-71	1,967	1,763	847	759
1971-72	2,192	1,883	943	810
1972-73	2,345	1,951	1,012	842
1973-74	2,512	1,967	1,109	868
1974-75	2,780	1,962	1,252	886
1975-76	3,022	1,953	1,382	890
1976-77	3,220	1,968	1,508	900
Percent Growth (1968-78)	123.7%	28.4%	142.0%	38.9%

[1]Based on information in Table 59 of Statistical Report of the Secretary of Education, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1978.

[2]Computed by dividing the current dollar figure by the Consumer Price Index for that year.

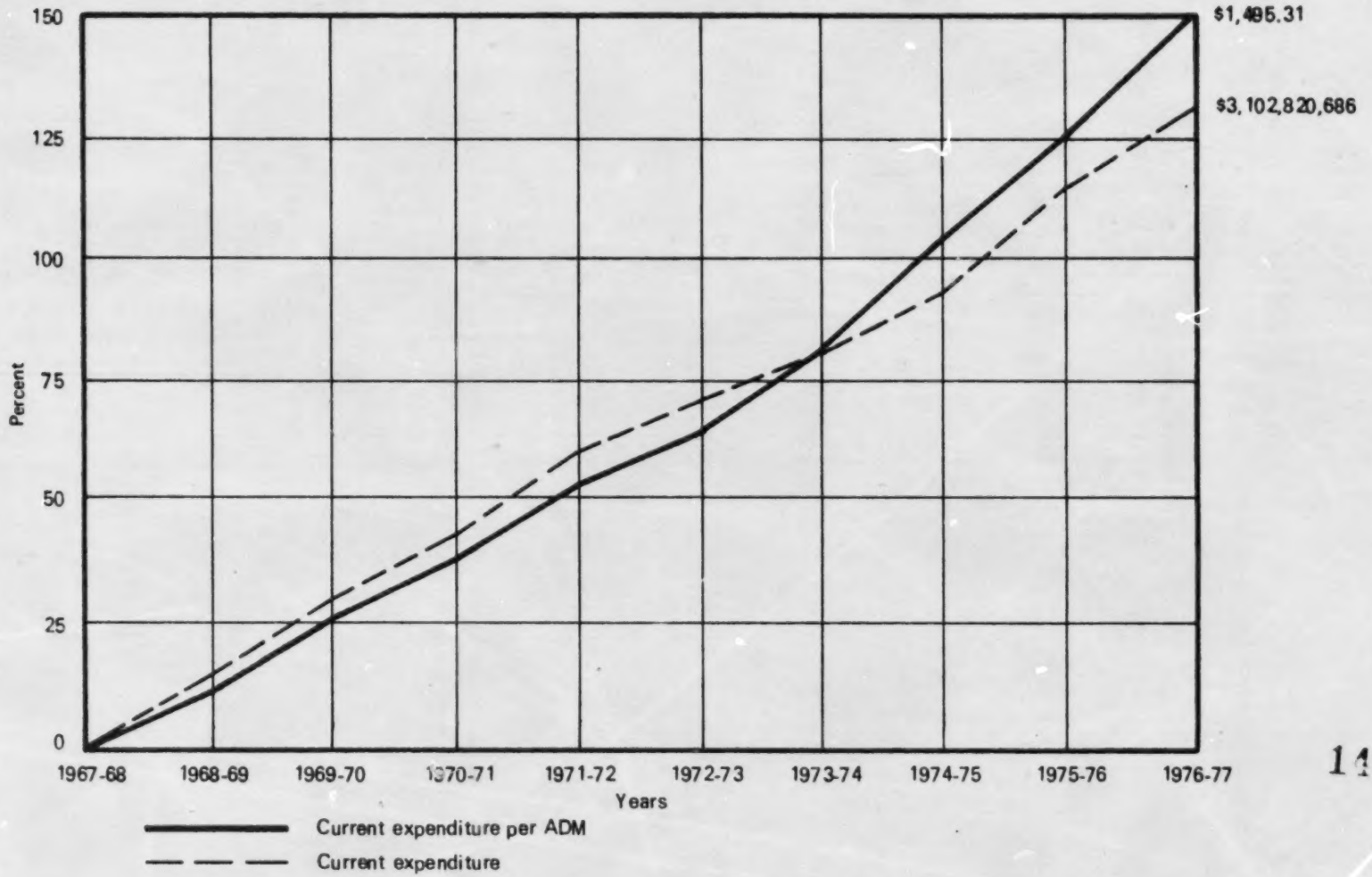
[3]Computed by dividing either current or constant dollar expenditures by the average daily membership (ADM) for that year.

Figure 44 is a graphic representation, over time, of general fund expenditures and also current fund expenditures per pupil, i.e., per ADM in terms of percentage change from 1967-78. Figure 45, on the other hand, shows growth in current dollar expenditures for basic education in terms of both actual and constant (1968) dollars. While there has been a rise in actual costs, it is moderate. Most of the observed increase in actual dollars has, therefore, been due to inflation.

Projected Current and Total Expenditures

An effort has been made by the Division of Education Statistics to project future growth in expenditures in light of enrollment decline and inflation. Figure 46 shows the most recent projections. It is evident that, despite declining enrollments, inflation will continue to cause an increase in actual (inflated) dollar costs for Pennsylvania.

FIGURE 44
COMPARISON OF CHANGE IN GENERAL FUND CURRENT EXPENDITURES AND CURRENT EXPENDITURES PER ADM IN PERCENT FOR SCHOOL DISTRICTS OF PENNSYLVANIA FOR THE YEARS 1967-68 THROUGH 1976-77

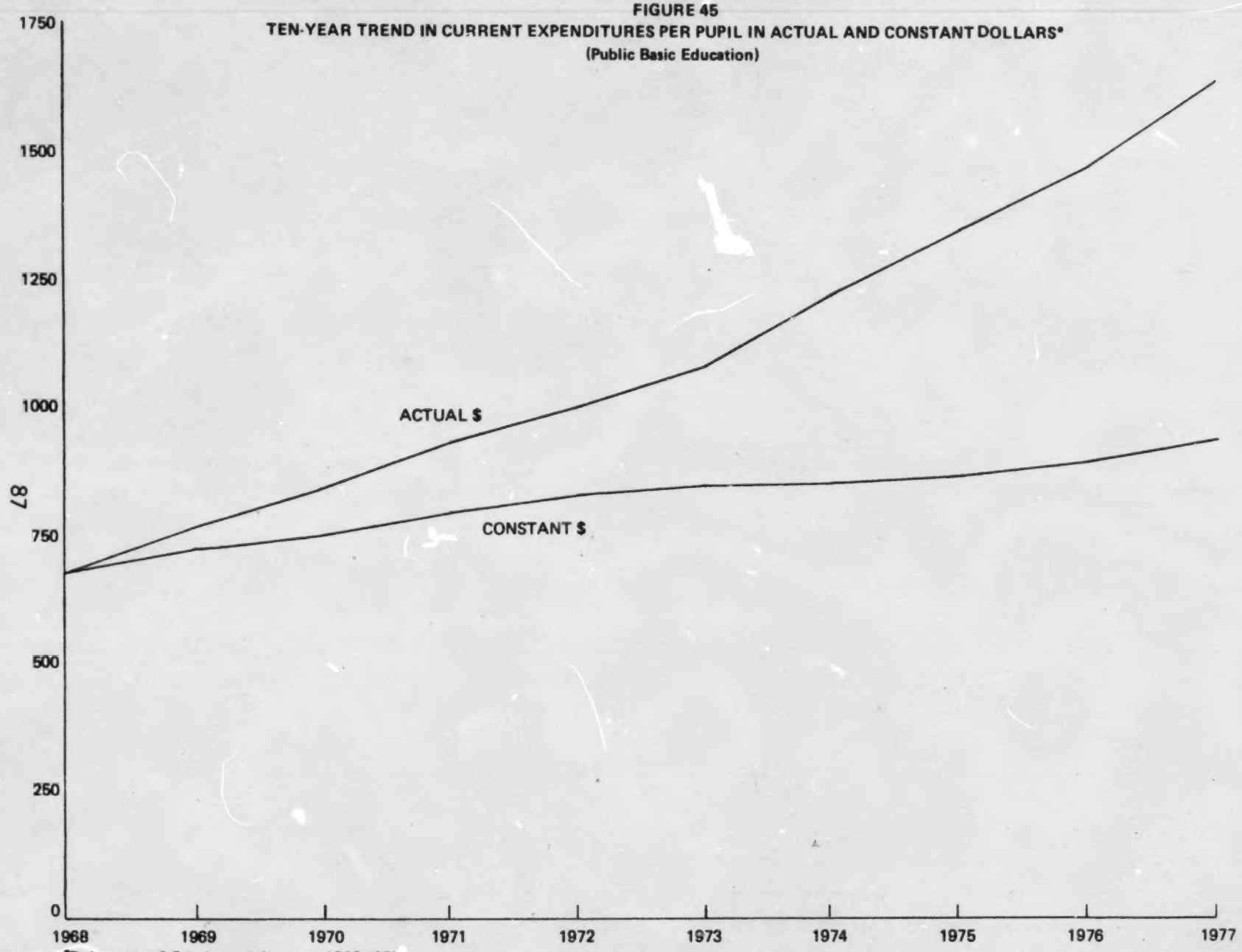


Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 45

TEN-YEAR TREND IN CURRENT EXPENDITURES PER PUPIL IN ACTUAL AND CONSTANT DOLLARS*

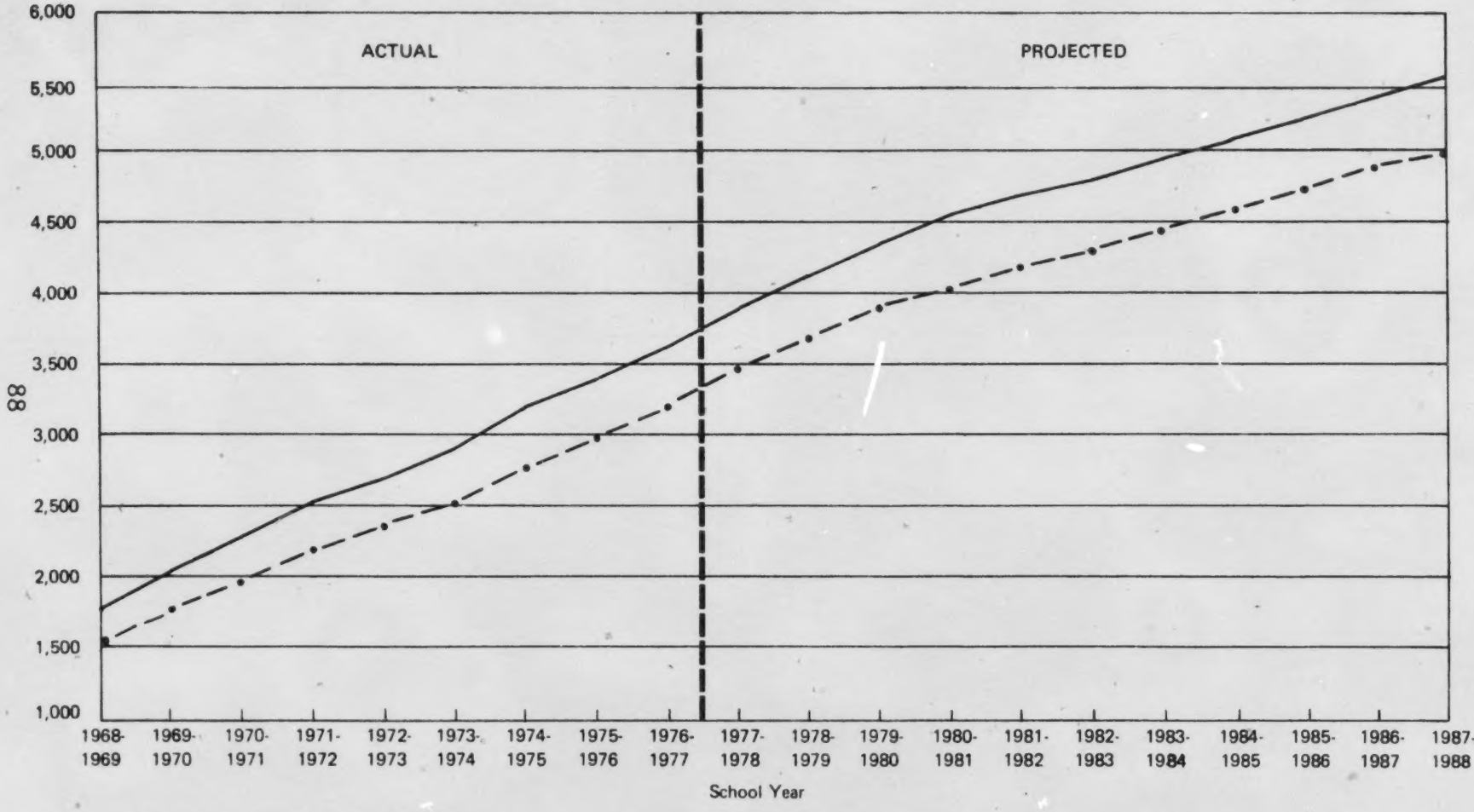
(Public Basic Education)



*Deflated by C.P.I. Annual Averages 1968-197

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 46
ACTUAL AND PROJECTED PENNSYLVANIA'S CURRENT AND TOTAL EXPENDITURES FOR PUBLIC SCHOOLS



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

When we ask where this rise in costs is coming from, we can readily see in Figure 47 that, historically, much of the increase is related to an increase in fixed charges, student body activities, transportation, plant operation and maintenance and increased pupil personnel services while the increases for administration and instruction have been much more moderate. Fixed charges for example, have almost doubled (196 percent) since 1969-70, while instruction has increased by only 64 percent during the same period. Fixed costs refer to retirement, fringe benefits, social security, etc. Many of these are mandated by law, or by contractual agreement, and are, therefore, not subject to ready control or reduction.

Basic Skill Acquisition and the Student

The decline in Scholastic Aptitude Test (SAT) scores that has occurred recently has been blamed in part upon a decline in educational standards as well as changes in society, the family and birth order. This decline is, however, slowing and may reverse itself as basic education responds to the challenges posed by public dissatisfaction and reassessment of the role and mission of the schools that is now and has been taking place.

In Pennsylvania we are fortunate in having Educational Quality Assessment--one of the pioneer efforts to assess the outcomes of schooling in a systematic way over time and at different grade levels.

While the Educational Quality Assessment (EQA) effort has its detractors and is subject to revision as Pennsylvania rethinks its goals in terms of what a student should learn or master (Project 81), it has already produced a considerable body of useful data. This data can not only be used by schools to compare themselves with other schools of a similar type, but it also makes possible some generalizations about Pennsylvania's students in general.

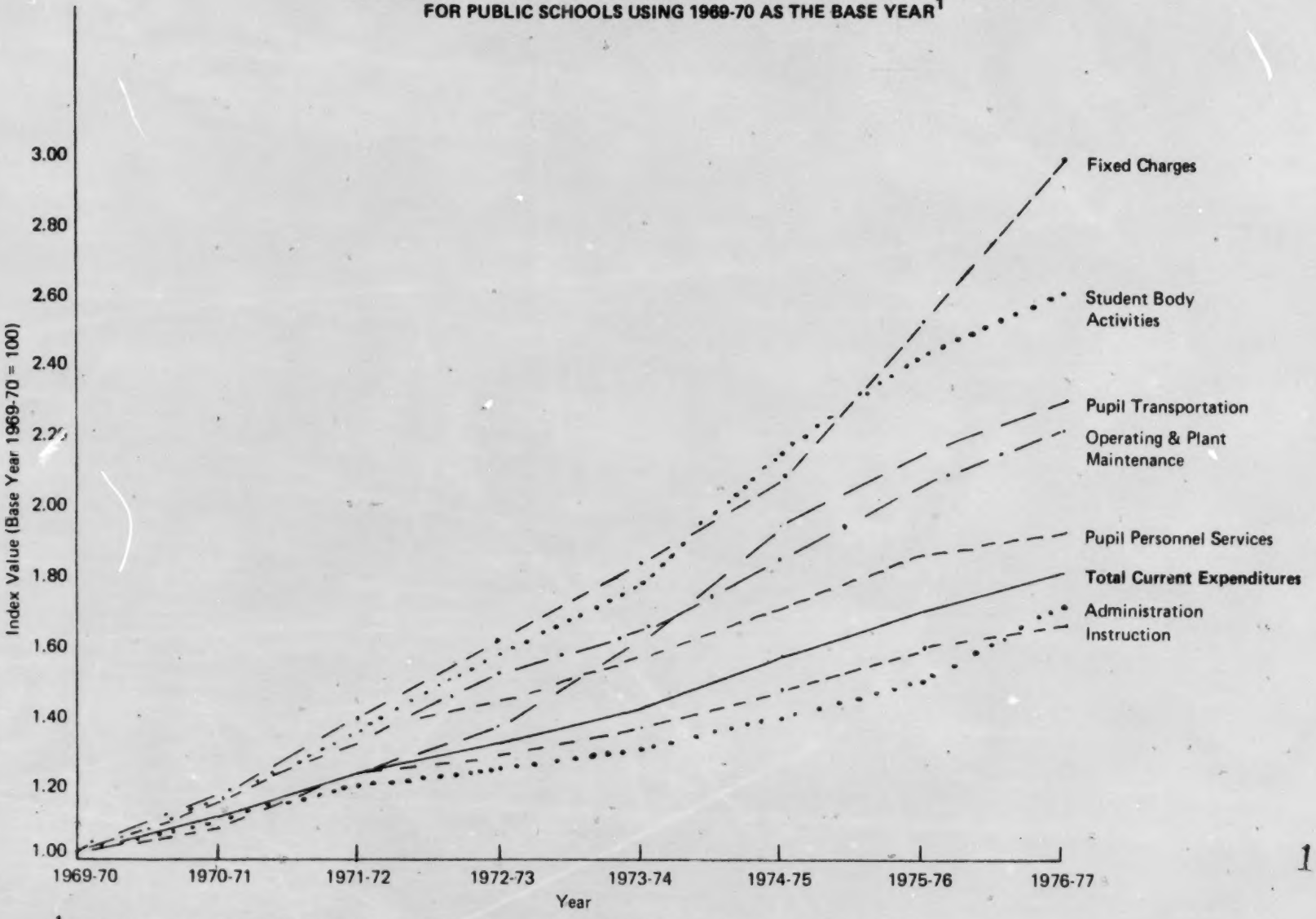
Table 34 gives an idea of the scope of the EQA effort from February 20 to March 17, 1978. Data from this period of testing was used to produce the information found in Table 37 and 38 and in Figures 48 through 53.

Table 35 attempts to summarize the statistically significant correlations between EQA goal, basic skill and cognitive measures and various suspected factors that may influence such mastery. The correlations are shown for Grades 5, 8 and 11 and are, for the most part, substantial, as can be seen at the bottom of the table (average, i.e., median correlation).

Table 36, on the other hand, similarly shows those correlations that were statistically significant but does this for the non-cognitive goal instruments used by the Office of Educational Quality Assessment.

Some of these relationships are of sufficient interest to be looked at more closely, especially those associated with basic skills mastery, i.e., writing, reading and mathematics.

FIGURE 47
A COMPARISON OF GROWTH IN GENERAL FUND CURRENT EXPENDITURES FOR PUBLIC SCHOOLS USING 1969-70 AS THE BASE YEAR[1]



[1]Derived from data provided by the Division of Education Statistics, The Pennsylvania Department of Education.

Table 34

Facts About Educational Quality Assessment[1]

PURPOSE	To provide comparative data to enable directors and administrators to appraise the educational performance of their students.
STUDENTS TESTED	29,956 fifth grade students from 453 volunteer schools 30,876 eighth grade students from 151 volunteer schools 28,653 eleventh grade students from 128 volunteer schools
TESTS USED	Customized tests developed by the Department of Education with input from advisory committees of Pennsylvania educators.
AREAS ASSESSED BY TESTS	Cognitive Goals: Reading; Writing Skills; Mathematics; Knowledge of Law/Government; Health Knowledge-Gr. 5; Career Awareness; Knowledge of Human Accomplishments; Information Usage Affective Goals: Self-Esteem; Understanding Others; Interest in School and School Learning; Societal Responsibility; Health and Safety Practices-Gr. 8 & 11; Creative Activities; Appreciating Human Accomplishments
TYPE OF SCORES	Percentile rank in state sample Position in predicted range based on inputs Percent of students reaching criterion levels Percent of students answering correctly or positively by item
PERIOD OF TESTING	February 20 - March 17, 1978

[1]Data provided by Division of Educational Quality Assessment, Bureau of Planning and Evaluation, Pennsylvania Department of Education.

Table 35

Educational Quality Assessment Measures of Basic Knowledges and Skills Correlated with Selected Home, School and Student Characteristics[1]

EQA Goal Instrument		Discipline Problems Well Handled by School			Absence of Factors Disruptive to Good Classroom Management			Degree of Teacher Influence on Instructional Decisions			Teacher's Perception of Parents as Supportive and Approving of School			Teacher Satisfaction with Parent-Teacher Relationship			Student Sees Parents as Supportive and Approving of School			Time (Hours) Spent on Homework			Time (Hours) Spent Watching Television			Amount of Reading Materials in Home		
		Grades			Grades			Grades			Grades			Grades			Grades			Grades			Grades			Grades		
		5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11
III-R.	Reading	.52	.42	.38	.52	.41	.41	.38	.34	.35	.60	.55	.44	.49	.51	.38	.44	.63	.57	n.s.[2]	.32	.37	-.47	-.65	-.59	.61	.51	.55
III-W.	Writing	.46	.37	.38	.50	.40	.44	.38	.32	.34	.60	.56	.47	.48	.52	.37	.43	.66	.52	n.s.	.29	.23	-.46	-.65	-.63	.64	.60	.65
III-M.	Mathematics	.43	.46	.45	.48	.45	.47	.34	.37	.39	.54	.61	.54	.43	.54	.47	.39	.57	.49	n.s.	.28	.23	-.42	-.62	-.66	.56	.62	.63
V-K.	Knowledge of Law and Government	.43	.27	.40	.43	.33	.41	.33	.23	.36	.56	.46	.49	.43	.41	.42	.40	.54	.52	n.s.	.23	.31	-.39	-.59	-.59	.58	.55	.65
IX-K.	Knowledge of Human Accomplishments	.43	.38	.35	.45	.35	.36	.37	.25	.35	.57	.54	.47	.42	.52	.45	.35	.57	.47	n.s.	.24	n.s.	-.40	-.52	-.54	.64	.68	.68
X.	Ability to Use Information	.15	.37	.44	.48	.41	.42	.37	.33	.38	.59	.58	.45	.46	.50	.41	.40	.61	.51	n.s.	.32	.18	-.43	-.58	-.57	.59	.55	.54
VIII.	Career Awareness	.48	.35	.41	.50	.35	.36	.25	.30	.40	.58	.54	.55	.45	.47	.44	.40	.47	.44	n.s.	.26	n.s.	-.43	-.55	-.54	.60	.59	.62
Average (Median) Correlation		.43	.37	.40	.48	.40	.41	.37	.32	.36	.58	.55	.47	.45	.51	.42	.40	.57	.51	n.s.	.28	.23	-.43	-.59	-.59	.60	.59	.63

[1]Derived from an Educational Quality Assessment manual, Interpreting Elementary, Intermediate and Secondary School Reports, compiled by James F. Hertzog and edited by Richard F. Seiverling, Division of Educational Quality Assessment, Bureau of Planning and Evaluation, Pennsylvania Department of Education, 1978. School means are the unit of analysis.

[2]n.s. means not significantly different from zero. Where a significant value does appear, it indicates that there is a positive or negative relationship between this characteristic of the student, his parents, the teacher or the school and the EQA score in question. A negative correlation means low rather than high EQA scores are associated with the presence of this characteristic. The higher the value shown, the greater the relationship, but a causal interpretation cannot be made on the basis of the correlation. It merely suggests that a causal relationship is possible.

Table 36

Selected Educational Quality Assessment Measures of Non-cognitive Goals Correlated with Selected Home, School and Student Characteristics[1, 2]

EQA Goal Instrument	Discipline Problems Well Handled by School			Absence of Factors Disruptive to Good Classroom Management			Degree of Teacher Influence on Instructional Decisions			Teacher's Perception of Parents as Supportive and Approving of School			Teacher Satisfaction with Parent-Teacher Relationship			Student Sees Parents as Supportive and Approving of School			Time (Hours) Spent on Homework			Time (Hours) Spent Watching Television			Amount of Reading Materials in Home		
	Grades			Grades			Grades			Grades			Grades			Grades			Grades			Grades			Grades		
	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11	5	8	11
I. Self Esteem	.26	.31	*	.31	.38	*	.21	.19	*	.38	.39	.20	.32	.28	*	.53	.67	.54	*	.38	.41	-.32	-.39	-.20	.39	.35	.27
II. Understanding Others	.33	.35	.27	.37	.32	.35	.30	.30	.21	.40	.53	.29	.32	.46	.26	.46	.67	.52	*	.28	.24	-.39	-.57	-.42	.44	.54	.43
IV. Interest in School and in Learning	*	.40	.23	*	.37	*	.10	.38	.25	*	.40	.19	*	.29	*	.49	.72	.71	.11	.46	.41	-.18	-.42	*	*	.16	*
VI. Health and Safety Practices	.43	.27	*	.48	.20	*	.36	.20	*	.55	.20	-.19	.43	.18	-.19	.36	.44	.29	*	.37	.34	-.47	-.30	.21	.58	*	-.19
VII. Creative Activities	*	*	*	.11	*	-.19	*	*	*	.12	*	.20	.11	*	*	.19	-.18	*	*	*	*	-.15	*	-.20	.30	.16	.33
Average (Median) Correlation	.26	.31	*	.31	.32	*	.21	.20	*	.38	.39	.20	.32	.28	*	.46	.67	.52	*	.37	.34	-.32	-.39	-.20	.39	.36	.27

[1]Derived from an Educational Quality Assessment manual, Interpreting Elementary, Intermediate and Secondary School Reports, compiled by James F. Hertzog and edited by Richard F. Seiverling, Division of Educational Quality Assessment, Bureau of Planning and Evaluation, Pennsylvania Department of Education, 1978. School means are the unit of analysis.

[2]An asterisk indicates that the correlation is not significantly different from zero, and is considered as a correlation of .00 for the purposes of computing a median. Where a significant value does appear, it indicates that there is a positive or negative relationship between this characteristic of the student, his parents, the teacher, or the school and the EQA score in question. A negative correlation means low rather than high EQA scores are associated with the presence of this characteristic. The higher the value shown, the greater the relationship, but a causal interpretation cannot be made on the basis of a correlation. It merely suggests that a causal relationship is possible.

Figure 48, for example, shows how the type of community relates to degree of mastery at each of the three grade levels. Children in suburban schools have higher scores than their rural or urban counterparts, while the urban school child shows the lowest level of mastery in terms of the percentage of items answered correctly.

Since the socioeconomic status of the family is known to be related to academic performance, Figure 49 shows this relationship clearly at all grade levels for mathematics, writing and reading skill acquisition.

When the focus becomes more specific and begins to look at the home learning environment, we see, in Figure 50, that the amount of reading material available in the home is strongly correlated with the degree of mastery of these three basic skill areas. Figure 51 similarly shows that when the pupil sees his or her parents as interested in and supportive of the school, his or her basic skill acquisition is likely to be greater than when the parents show little or no interest, no support or even a negative attitude toward the schools.

Figures 52 and 53 are of particular interest in that they show that basic skill acquisition is a function of hours spent on homework and is negatively related to the number of hours spent watching television. In general, those spending one to two hours on homework and only about two to three hours watching television make better scores on the basic skills instrument. Students who do not watch television that much, or who watch it a great deal more, do not do as well. Those who do less than one hour's homework, or no homework, do poorly, as do those who have to spend three or more hours on their homework. The latter is apparently a function of lower academic ability.

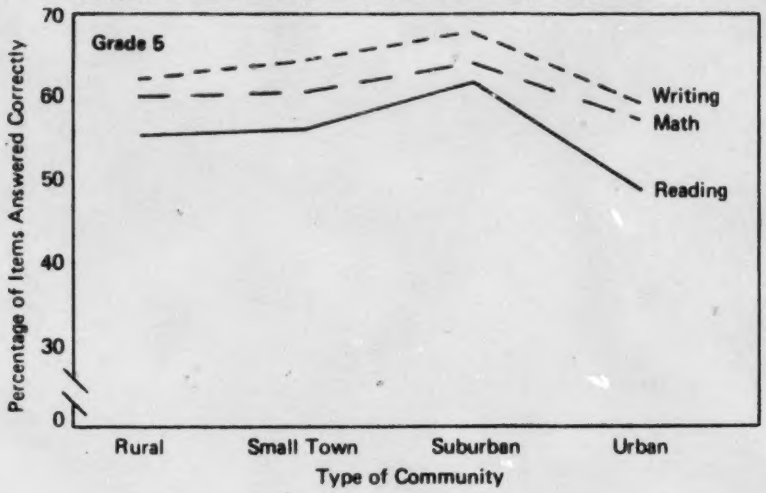
Vocational Education

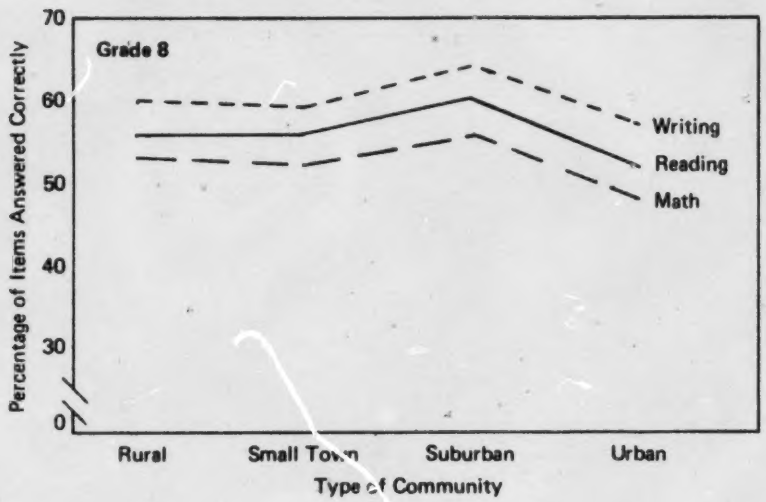
At this point, it also seems appropriate to look at the area of vocational education. Vocational education has increased dramatically in terms of both the money spent (Figure 54) and the number of pupils enrolled (Figure 55) during the 1960s and 1970s. Although the federal funding involved has increased from $2,764,725 in 1963-64 to $29,172,633 in 1976-77, this actually represents a reduction in the proportion of total funds involved, from 22 percent in 1963-64 to 12 percent in 1976-77; meanwhile state and local shares have markedly increased, with the state now accounting for 50 percent of the total and local sources accounting for 38 percent. This is in marked contrast to 1963-64, when state funding represented only 16 percent (approximately the same as the federal share) and local funds accounted for the largest portion (62 percent) of the funding. This, of course, reflects the strong recent interest in vocational education taken by the states and the federal government.

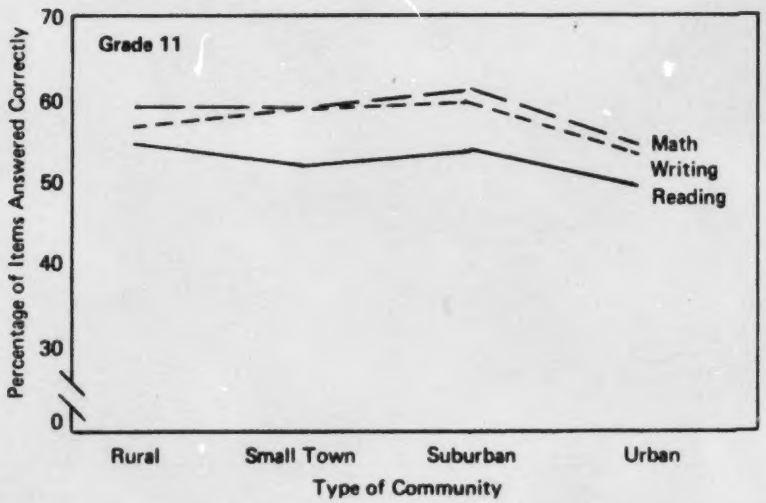
Total funding has similarly grown from $12,324,754 in 1963-64 to $251,528,076 in 1976-77, a twenty-fold increase in 13 years. This far exceeds any effects due to inflation and again emphasizes the increasing importance placed upon vocational education programs and facilities in recent years.

Figure 55 shows that the growing interest in vocational education has been accompanied by an increase in enrollments, from 106,848 in 1963 to 428,850 in 1977, a four-fold increase. Money spent per pupil has also increased from $115 per enrollment in 1963-64 to $599 in 1976-77; a more than four-fold increase in per pupil expenditures during this period.

FIGURE 48
BASIC SKILLS ACQUISITION BY TYPE OF COMMUNITY



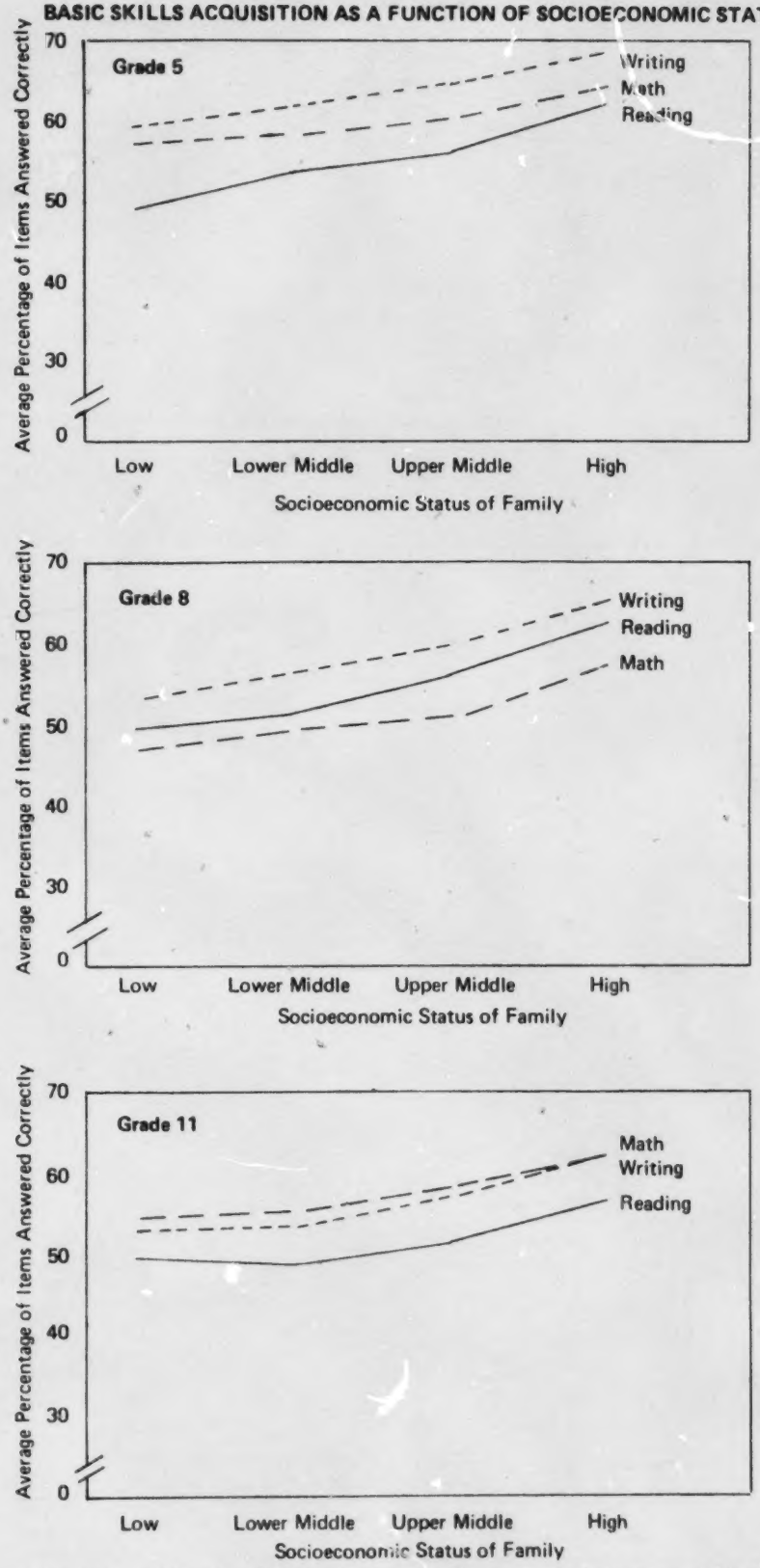




Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

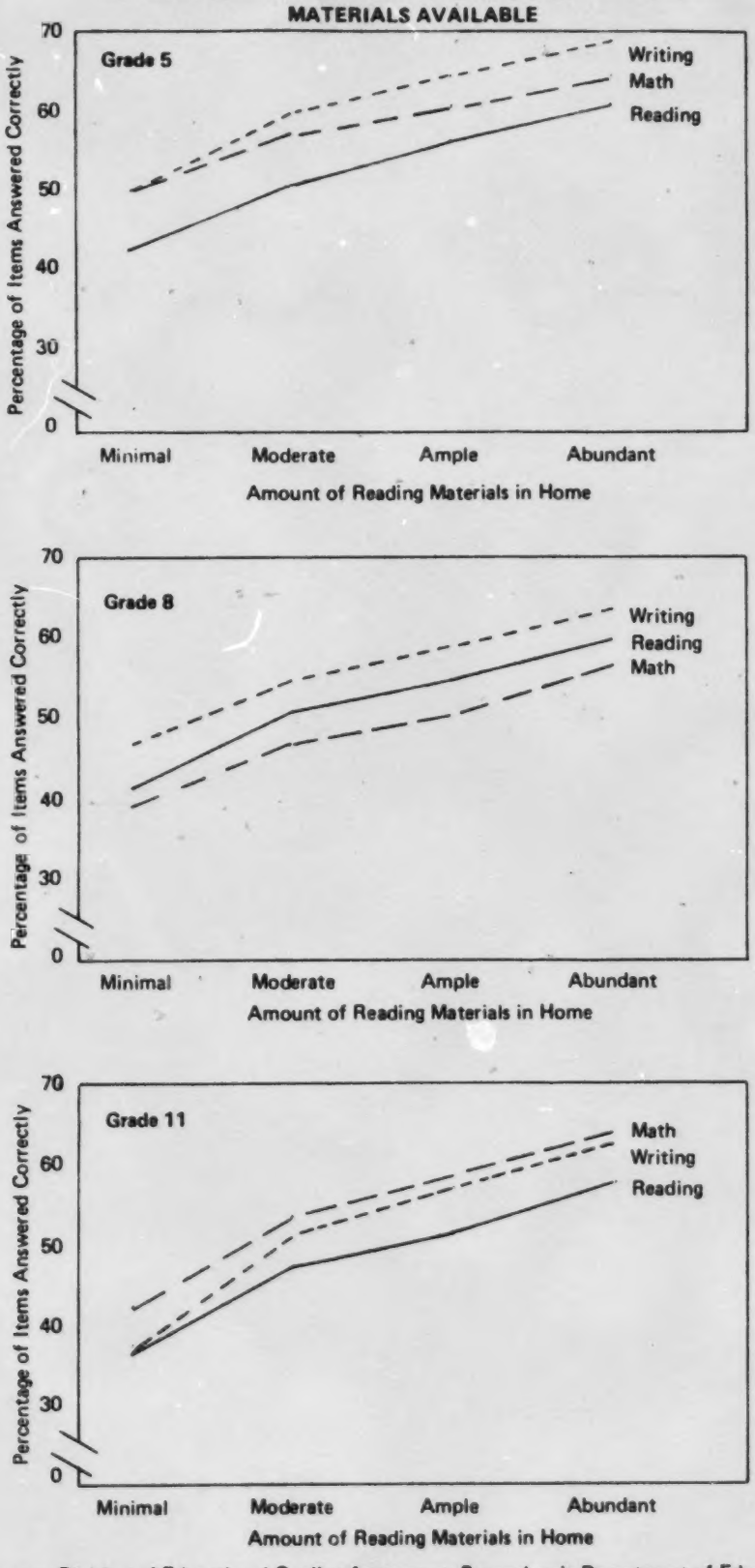
FIGURE 49

BASIC SKILLS ACQUISITION AS A FUNCTION OF SOCIOECONOMIC STATUS



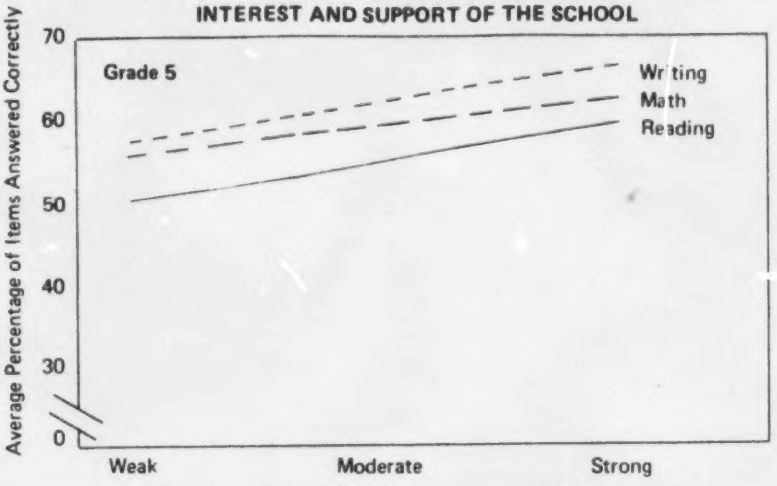
Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

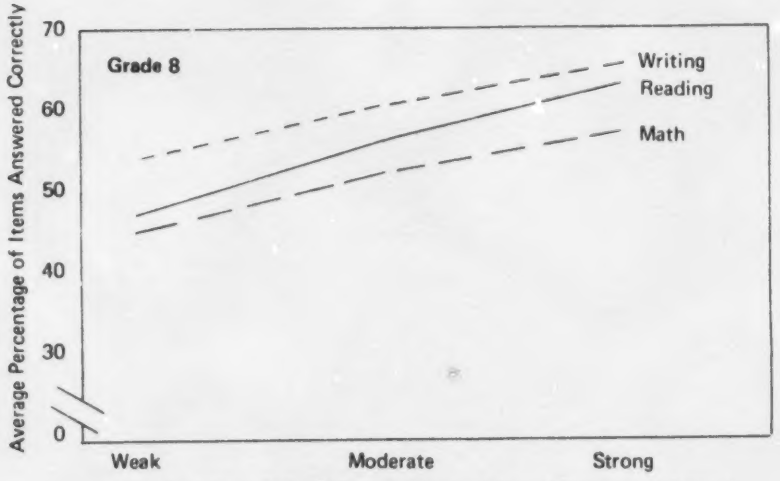
FIGURE 50
BASIC SKILLS AS A FUNCTION OF THE AMOUNT OF READING MATERIALS AVAILABLE

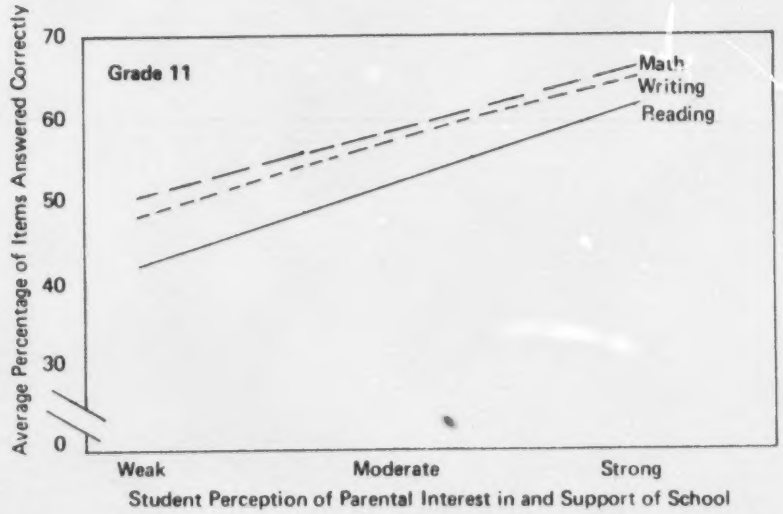


Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

FIGURE 51
BASIC SKILLS ACQUISITION AS A FUNCTION OF PARENTAL INTEREST AND SUPPORT OF THE SCHOOL

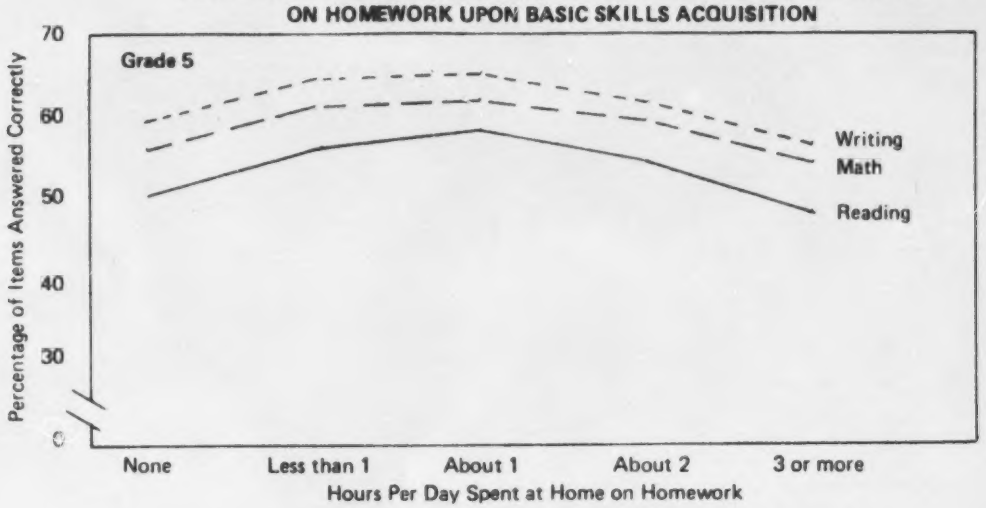


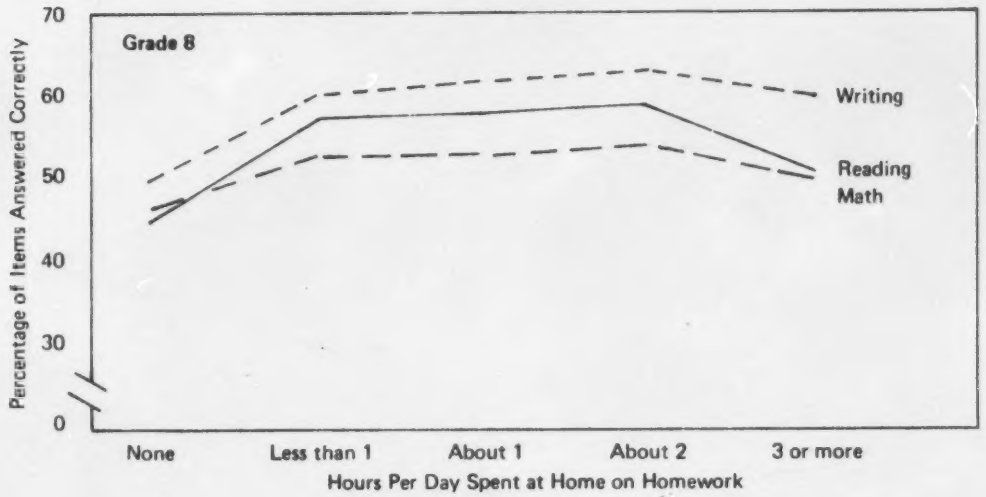


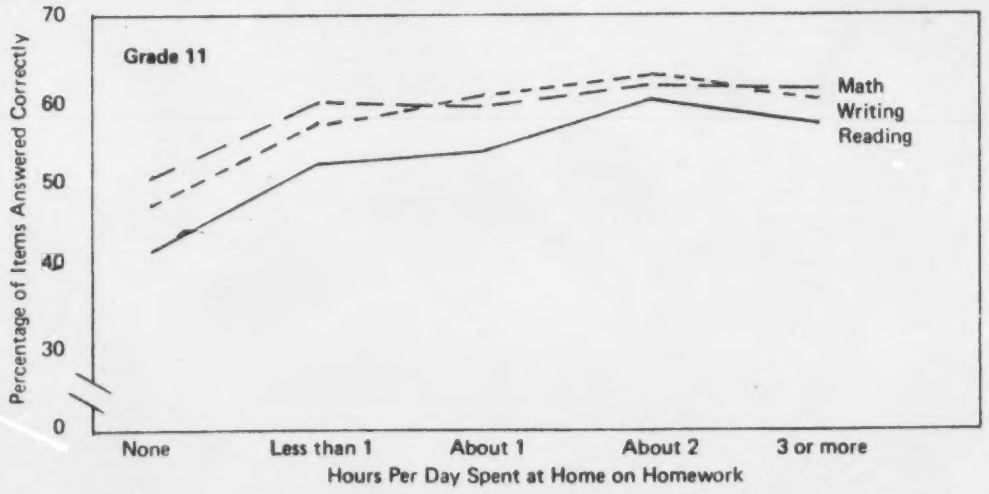


Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

FIGURE 52
AN ACROSS GRADES COMPARISON OF THE EFFECT OF HOURS SPENT ON HOMEWORK UPON BASIC SKILLS ACQUISITION

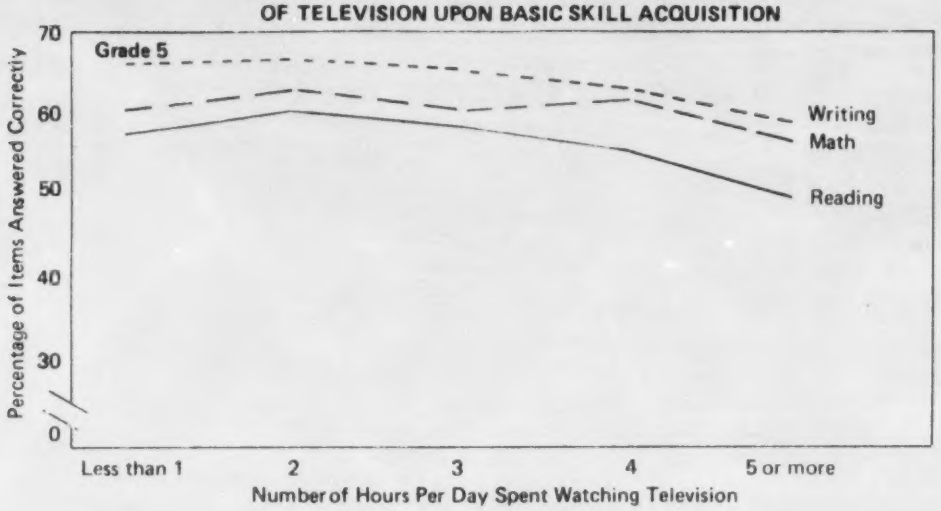


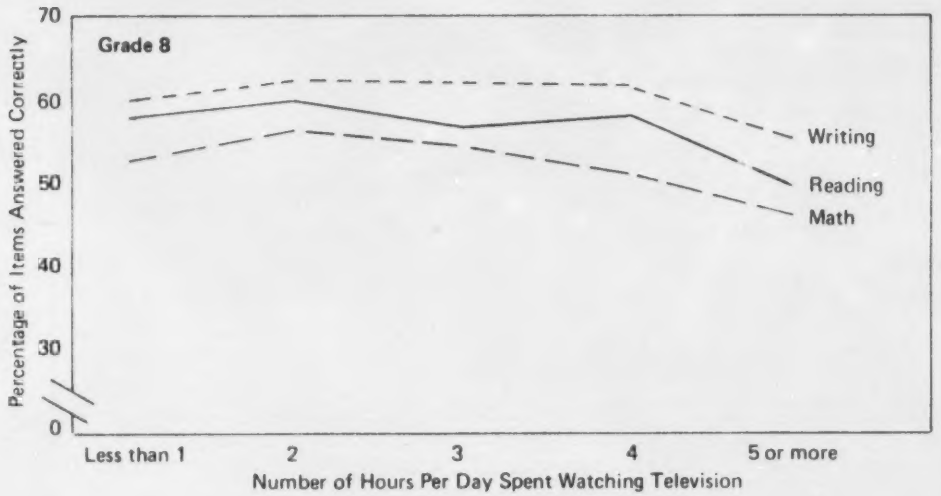


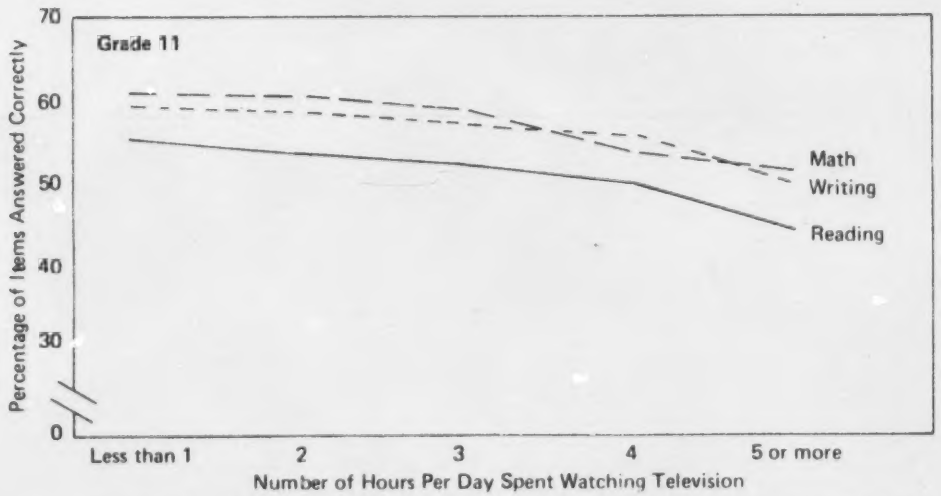


Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

FIGURE 53
AN ACROSS GRADES COMPARISON OF THE EFFECT OF TELEVISION UPON BASIC SKILL ACQUISITION



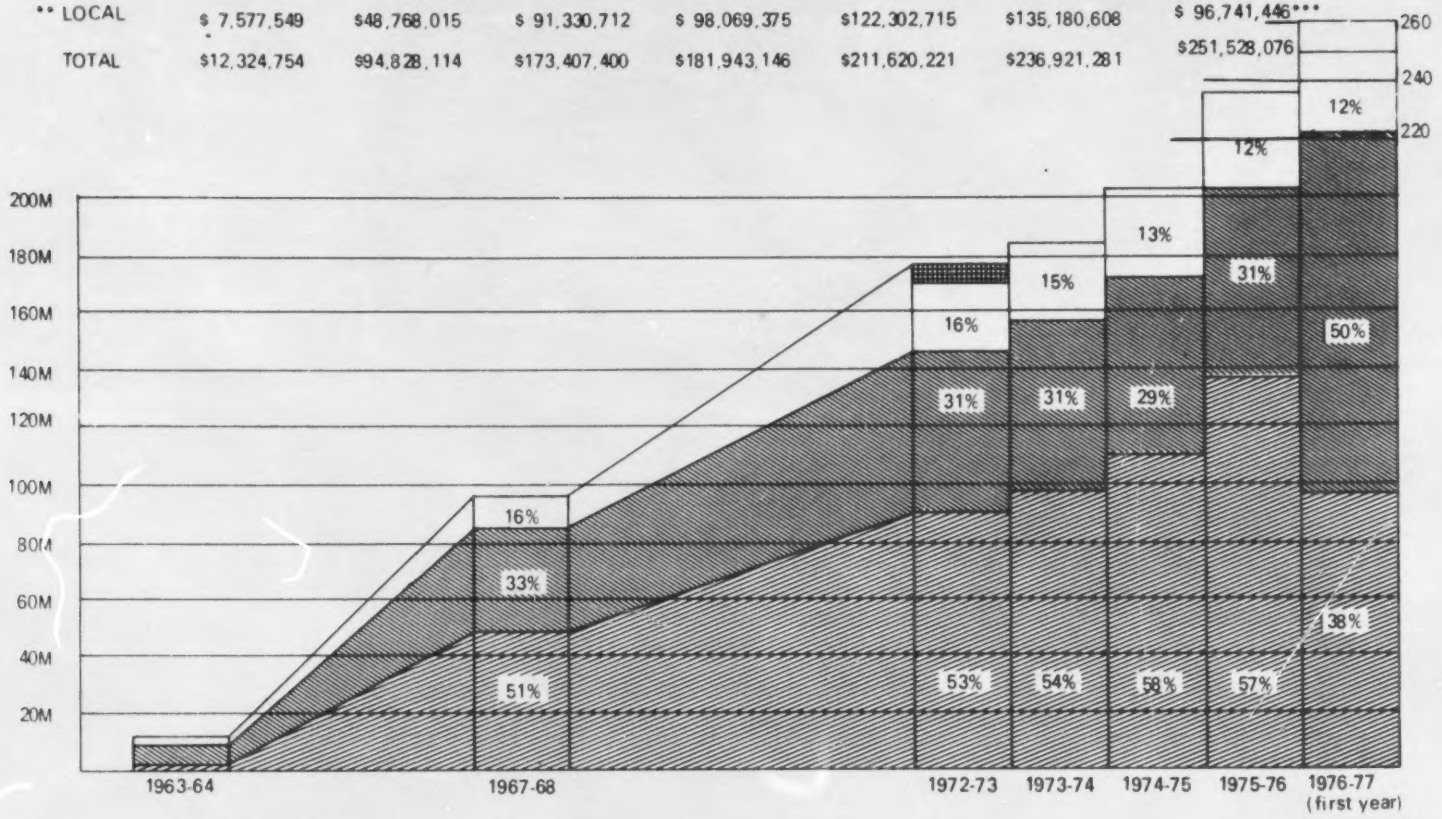




Source: Division of Educational Quality Assessment, Pennsylvania Department of Education

FIGURE 54
INVESTMENT OF FEDERAL, STATE AND LOCAL FUNDS
1964-1977

SOURCE	1963-64	1967-68	1972-73	1973-74	1974-75	1975-76	1976-77
* FEDERAL	$ 2,764,725	$14,492,236	$ 28,405,851	$ 27,438,139	$ 28,092,673	$ 28,068,461	$ 29,172,633
** STATE	$ 1,982,480	$31,567,863	$ 53,670,837	$ 56,435,632	$ 61,224,833	$ 73,672,212	$125,613,997***
** LOCAL	$ 7,577,549	$48,768,015	$ 91,330,712	$ 98,069,375	$122,302,715	$135,180,608	$ 96,741,446***
TOTAL	$12,324,754	$94,828,114	$173,407,400	$181,943,146	$211,620,221	$236,921,281	$251,528,076



FEDERAL | $4,261,096 FEDERAL IMPOUNDED | STATE | LOCAL

* Allotment

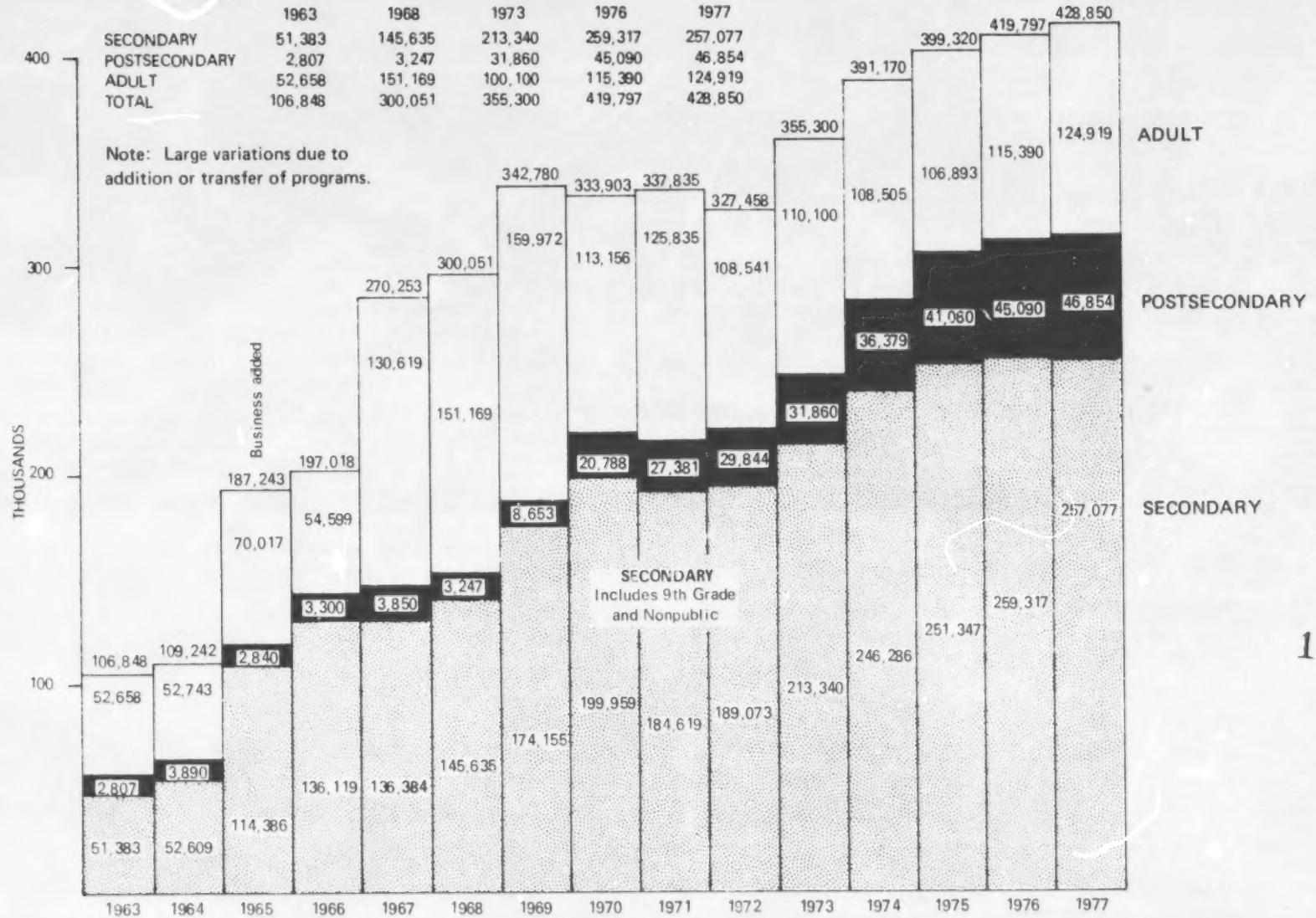
** Expenditure

*** State share increased due to funding of Philadelphia and Pittsburgh AVTS's on a direct State advance payment method - $48 M.

Source: Bureau of Vocational Education (Administrative and Planning Division), Pennsylvania Department of Education

FIGURE 55
PENNSYLVANIA VOCATIONAL ENROLLMENTS

	1963	1968	1973	1976	1977
SECONDARY	51,383	145,635	213,340	259,317	257,077
POSTSECONDARY	2,807	3,247	31,860	45,090	46,854
ADULT	52,658	151,169	100,100	115,390	124,919
TOTAL	106,848	300,051	355,300	419,797	428,850



Source: Bureau of Vocational Education (Administrative and Planning Division), Pennsylvania Department of Education

Chapter Summary

Based on the findings in this chapter, basic education has obviously been strongly affected by the rapid decline in births coupled with the impact of inflation and the demands of an increasingly technological society. As a consequence we see an increasing emphasis on job preparation and remediation along with a reduction in the number of teachers and schools as the enrollments decline. Some increase in the number of births is to be expected as the "baby boom" generation has children during the next decade but, as of now, there is no sign that the fertility rate will increase, although its decline has slowed. The picture is one of further decline in enrollments with the major brunt falling upon the secondary schools during the next decade. There is also no indication that inflationary and other cost rise pressures will slacken in the near future. The next chapter indicates a possible lack of strong demand for college degree holding workers. This suggests that the current emphasis on vocational education will continue into the future.

Chapter III

THE CONDITIONS OF HIGHER EDUCATION

This chapter delineates some of the most important indicators of the conditions of higher education that now exist and that may exist in the future. As before, most of the data is presented in graphic form, since this often makes a trend or pattern more dramatically evident than a more detailed table.

Two major issues will be emphasized in this chapter: first, the question of the financial support of and expenditures for higher education in Pennsylvania; second, that of expected enrollment declines resulting from the recent birth decline and, possibly, from a reduced labor market demand for college graduates.

Financial Support of Higher Education

Figure 56 indicates that Pennsylvania, with its six percent increase in appropriations from 1975-76 to 1977-78, ranked 50th from the top of the fifty states in terms of percentage increase in appropriations. Figure 56 also indicates that Pennsylvania ranked 44th from the top among the fifty states with regard to both 1977-78 appropriations per capita, i.e., per citizen of Pennsylvania, and 1977-78 appropriations per $1,000 of personal income. In effect, our support is shown to be less than half the national average in both instances.

Figure 57 shows the 1977-78 percentage increases found in the first column of Figure 56. Pennsylvania was by far the lowest of the 15 states with less than an 18 percent increase in 1977-78 appropriations.

It is of interest to note further that only Maine and Massachusetts, of these 15 low appropriation states, were below Pennsylvania on the per capita and per $1,000 of personal income measures and that seven to eight of these 15 low states were nevertheless higher than the national average with regard to the per $1,000 of personal income and per capita measures, respectively.

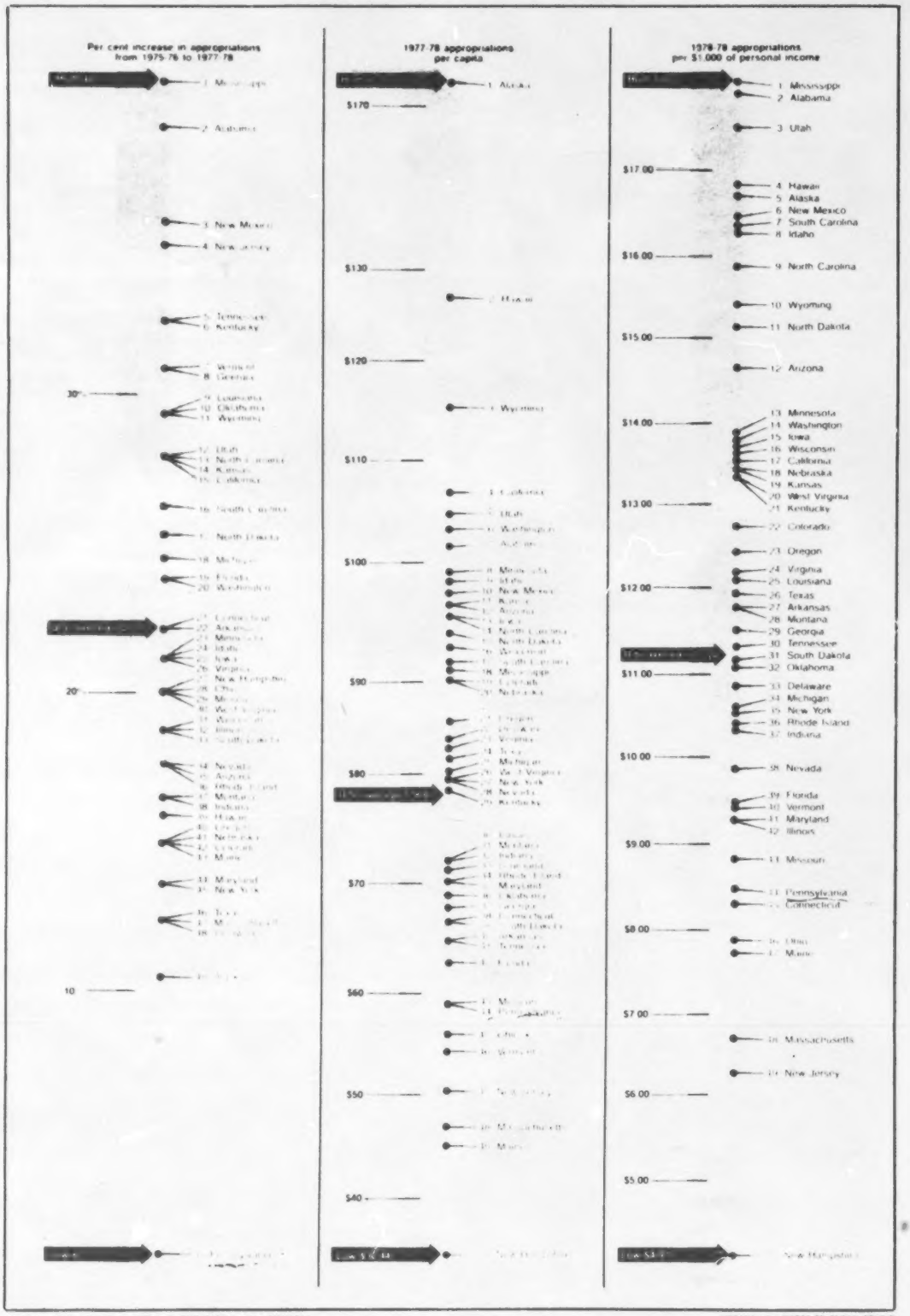
Expenditures and State or National Wealth

Figure 58 shows the change over time of national and Pennsylvania expenditures for higher education as a percentage of the gross national product (GNP) or the gross state product (GSP) of Pennsylvania. As can be seen, Pennsylvania's proportion of its GSP has been substantially lower during most of the 1960s and early 1970s but has recently more closely matched the national effort with projections of an even closer match made by Durkee, based on estimated GSPs for 1975 and 1976. This suggests that Pennsylvania primarily has a problem with inflated costs rather than with an effort that does not match the national effort. It is a fact, moreover, that the Northeast has a higher cost due to inflation than much of the nation.

Current Revenue

Figure 59 indicates the sources from which higher education's revenues derived in 1977. It is interesting to note that student tuition and fees account for only 30.4 percent of the total and that governmental appropriations account for 22.4 percent, with an additional 11.5 percent from government grants and contracts. The

FIGURE 56
PENNSYLVANIA COMPARED WITH OTHER STATES ON THREE HIGHER EDUCATION APPROPRIATIONS CRITERIA[1]



SOURCES: M.M. CHAMBERS AND U.S. DEPARTMENT OF COMMERCE

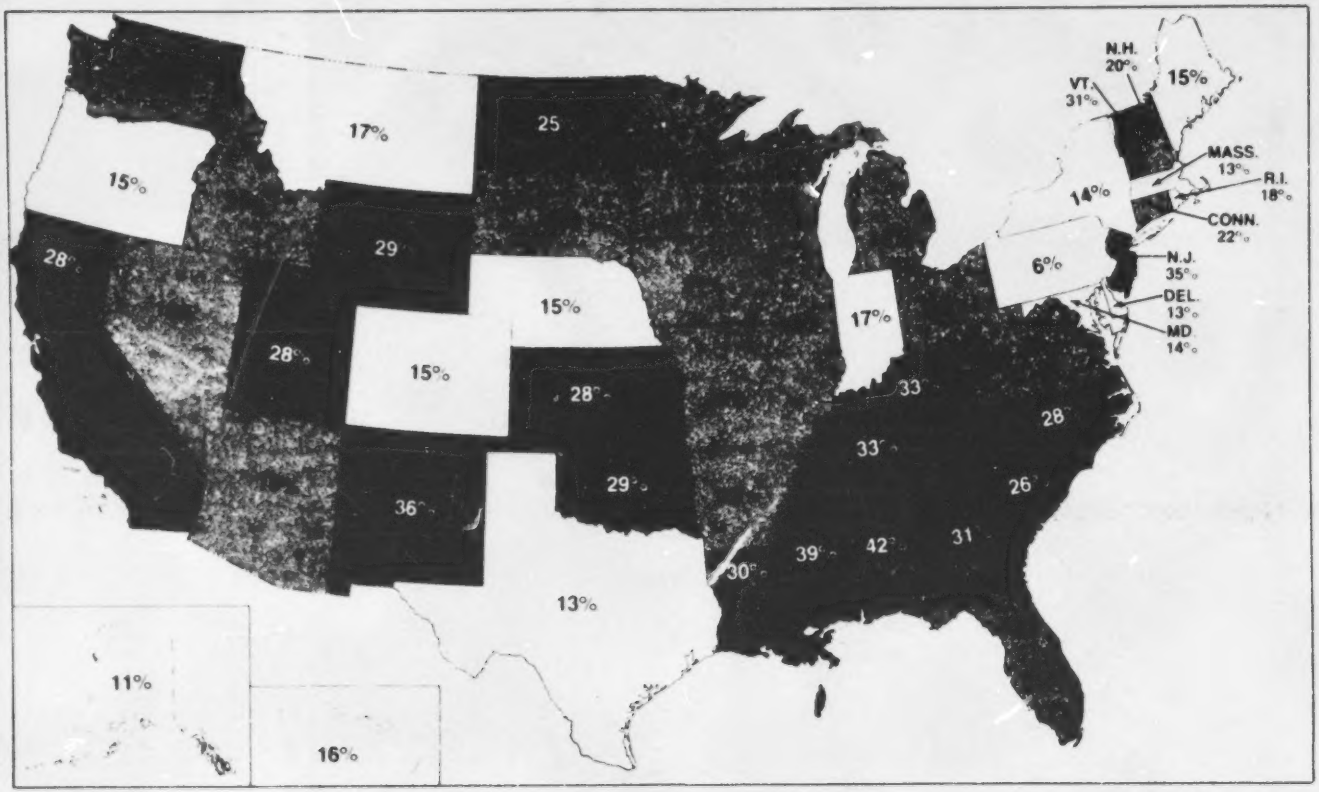
CHRONICLE CHARTS BY SUSAN BROWN

Appropriations of state tax funds for higher education are ranked above according to three different criteria.

[1] Reproduced by permission from *The Chronicle of Higher Education*, Vol. XVII, No. 6, October 10, 1978.

FIGURE 57

Increases in State Support for Higher Education

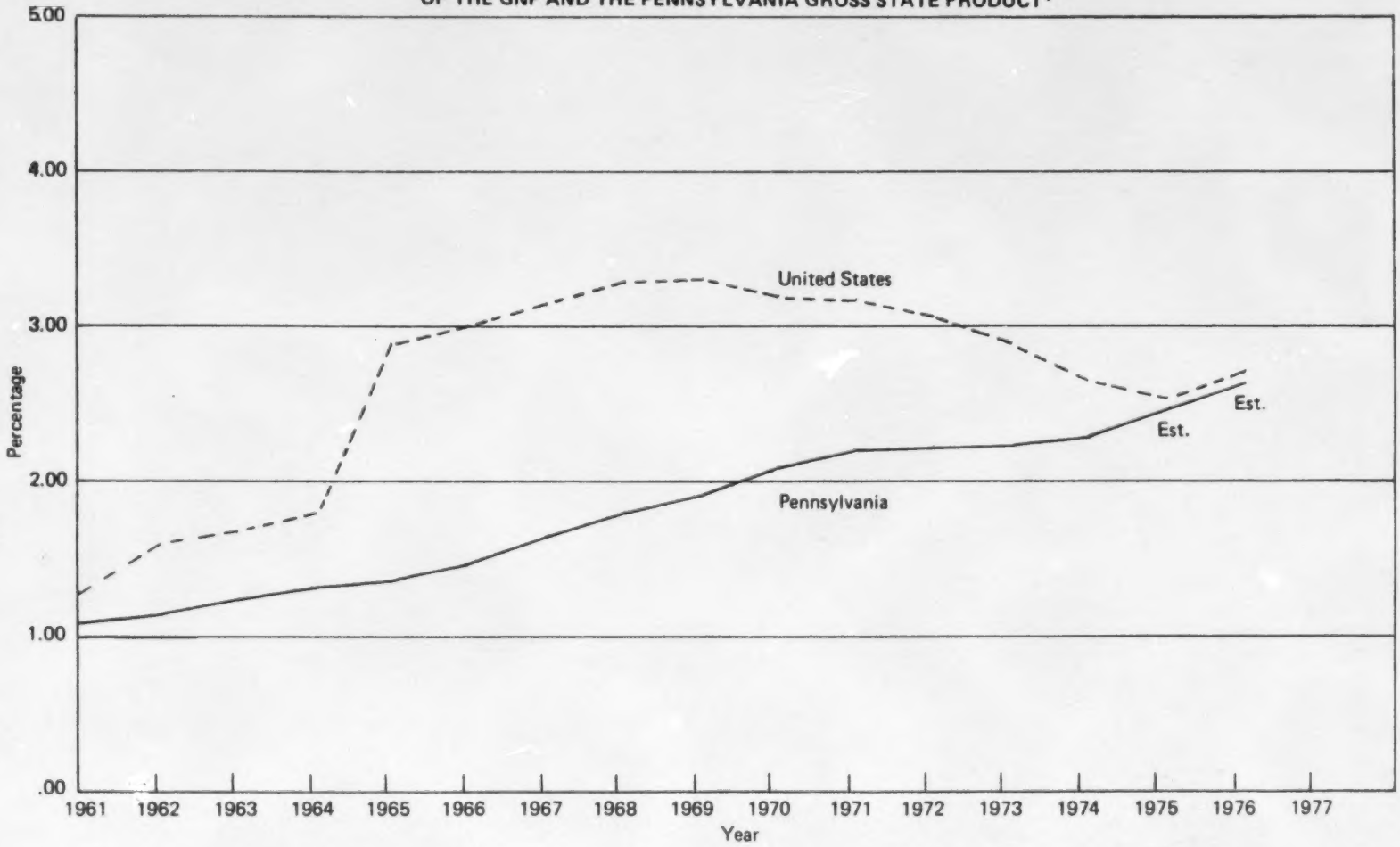


SOURCE: M.M. CHAMBERS

CHRONICLE MAP BY SUSAN BROWN

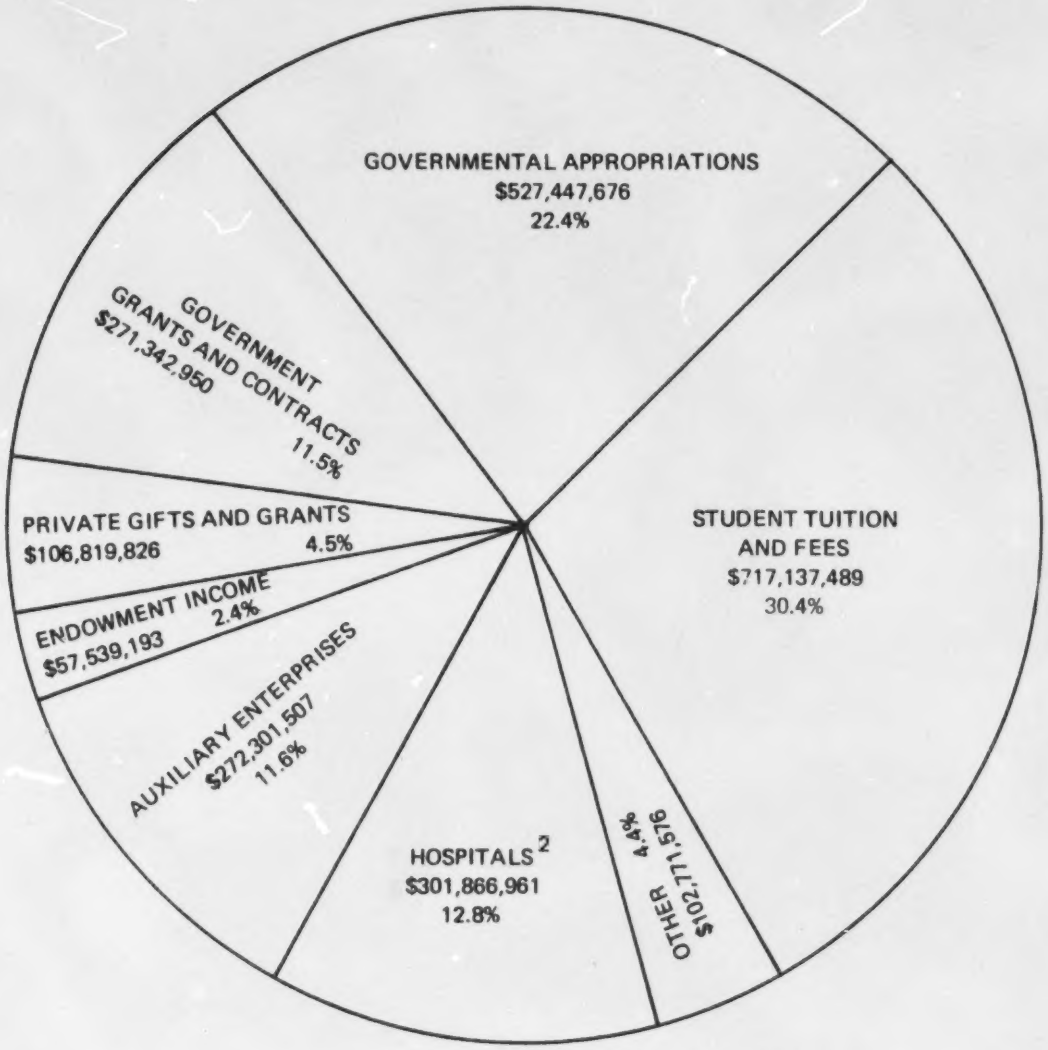
[1] Reproduced by permission from the *Chronicle of Higher Education*, Vol. XVII, No. 6, October 10, 1978. The heavily shaded states are the 17 states that increased their appropriations by at least 25 percent in the past two years, the lightly shaded are the 18 states increasing their appropriations by 18 to 25 percent, and the unshaded states are the 15 states with increases of less than 18 percent. Of these, Pennsylvania is the lowest by far with a six percent increase.

FIGURE 58
U.S. AND PENNSYLVANIA HIGHER EDUCATION CURRENT EXPENDITURES AS A PERCENTAGE OF THE GNP AND THE PENNSYLVANIA GROSS STATE PRODUCT[1]



[1]Source: Table 1, Durkee, Frank M. *Financing Higher Education in Pennsylvania (Report No. 2): Cost of Higher Education and Governmental Support of Higher Education in Relation to Resources, 1961-76.* Division of Research, Bureau of Information Systems, Pennsylvania Department of Education (December 1975, revised).

FIGURE 59
CURRENT FUNDS REVENUE BY SOURCE FOR FISCAL YEAR ENDING 1977[1]



[1]From *Our Colleges and Universities Today* (Vol. XV, No. 8). Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

[2]Revenues from medical school hospital facilities

remaining funds come from private gifts, endowments and associated enterprises connected with higher education. In effect, the general public, in one way or another, now pays about 70 percent of the cost of higher education over and above income from tuition and fees.

When we look at the appropriations made by Pennsylvania on a per student basis, i.e., per full-time equivalent (FTE), compared with comparable figures for various geographical regions and for the United States as a whole, we see, in Figure 60, that only the Northeast as a whole exceeds the Pennsylvania costs per FTE student. Again, this suggests a high cost (inflation?) problem that is characteristic of Northeastern states in general.

Current Expenditures

Expenditures for the fiscal year ending in 1977 are shown in Figure 61, broken down by area of expenditure. As noted earlier, the portion of revenues from student tuition and fees constituted about 30 percent of total revenues. Here we see, interestingly enough, that instructional costs also represent about 30 percent of the expenditures. In effect, income from tuition and fees virtually pays for instructional costs with very little left for other costs.

Both the state, through the appropriation of tax monies, and the general public, through taxes, gifts, etc., pay for the non-instructional portion. Obviously, however, the precise breakdown of tuition and fees vs. other income sources will vary according to type of institution (private, state college or university, etc.).

Figure 62 compares growth in enrollments during the same period. Obviously, higher education costs have been rising at a much faster rate than enrollments during this period. Much of this rise has, of course, been due to inflation.

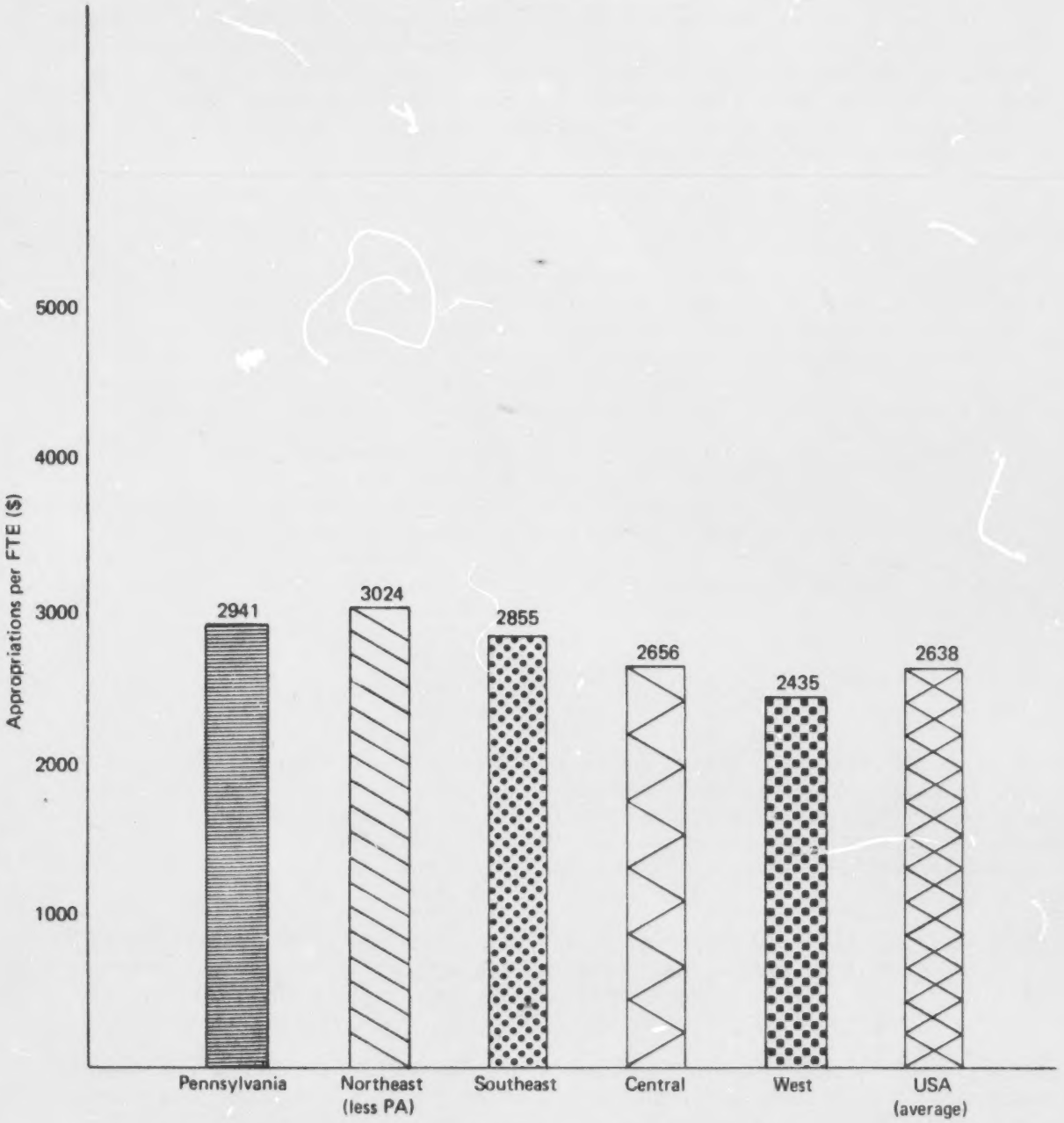
The Impact of Inflation

In Figure 63, the impact of inflation upon Pennsylvania's higher education expenditures since 1967-68 is shown by comparing actual dollar expenditures per FTE student with deflated 1968 dollar per FTE student expenditures. It is clear that, although expenditures due to the real costs of rising enrollments, etc., have in fact risen, most of the observed increase is attributable solely to the impact of inflation.

Figure 64, in comparison, also reflects the strong impact of inflation upon the nation's higher education expenditures per FTE student, with a slight increase followed by a recent decline in real dollar expenditures by the higher education institutions of the nation.

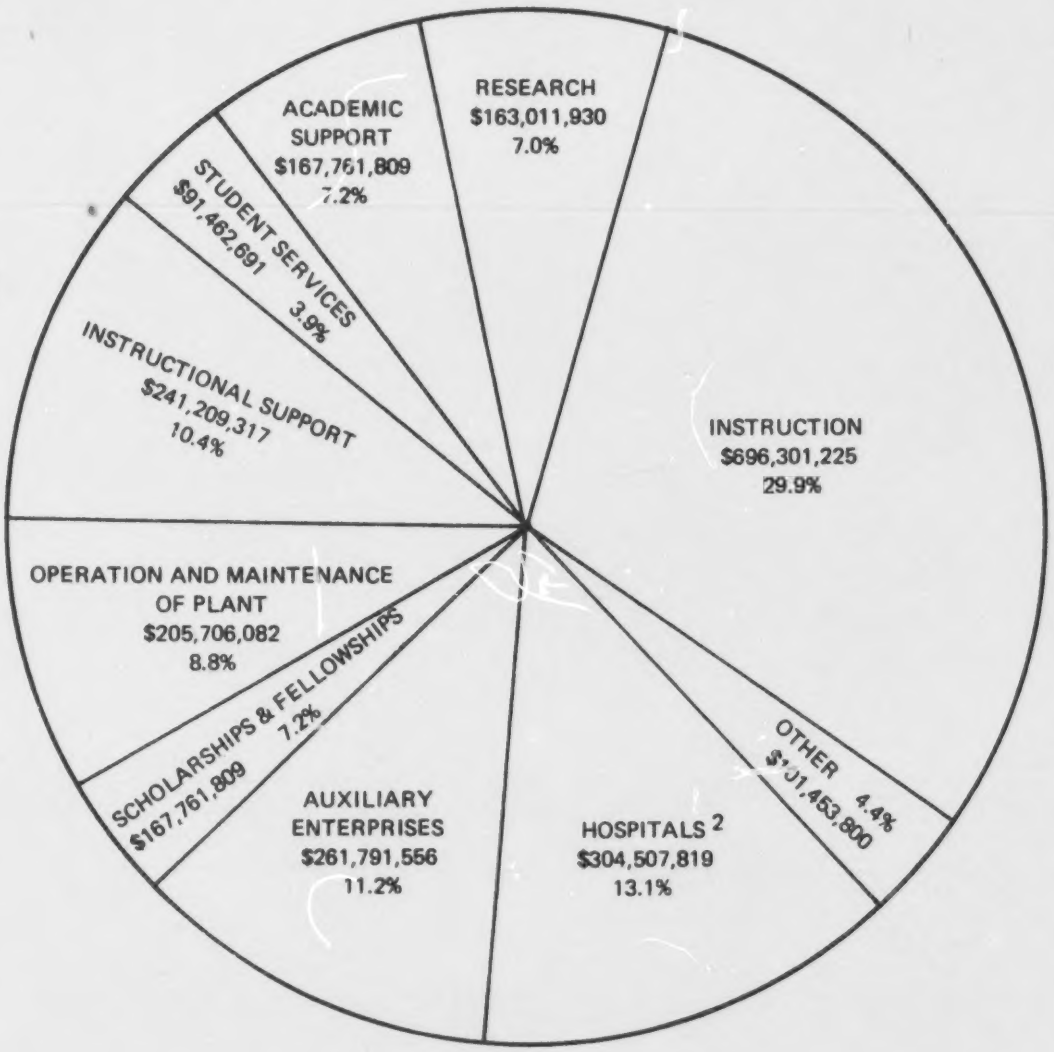
In Figure 65, a comparison between national constant dollar public college expenditures per FTE student and Pennsylvania state colleges and university constant dollar per FTE student expenditures has been made. While rising fuel costs and leveling enrollments undoubtedly account for some of the increase for Pennsylvania over that of the nation as a whole since 1970-71, there is little doubt that the reversal from lower to higher expenditures per FTE student in 1971-72 is a reflection of the impact of the collective bargaining process that began in 1971-72.

FIGURE 60
COMPARISON OF PENNSYLVANIA WITH REGIONAL AND U.S. AVERAGE
APPROPRIATIONS PER FTE 1978-79
(PUBLIC INSTITUTIONS)



Source: Appropriations obtained from M.M. Chambers, "State Tax Funds for Higher Education" *The Chronicle of Higher Education*, October 10, 1978, pp 15-16 FTE enrollments for 1977 and were obtained from the National Center for Education Statistics, October 26, 1978.

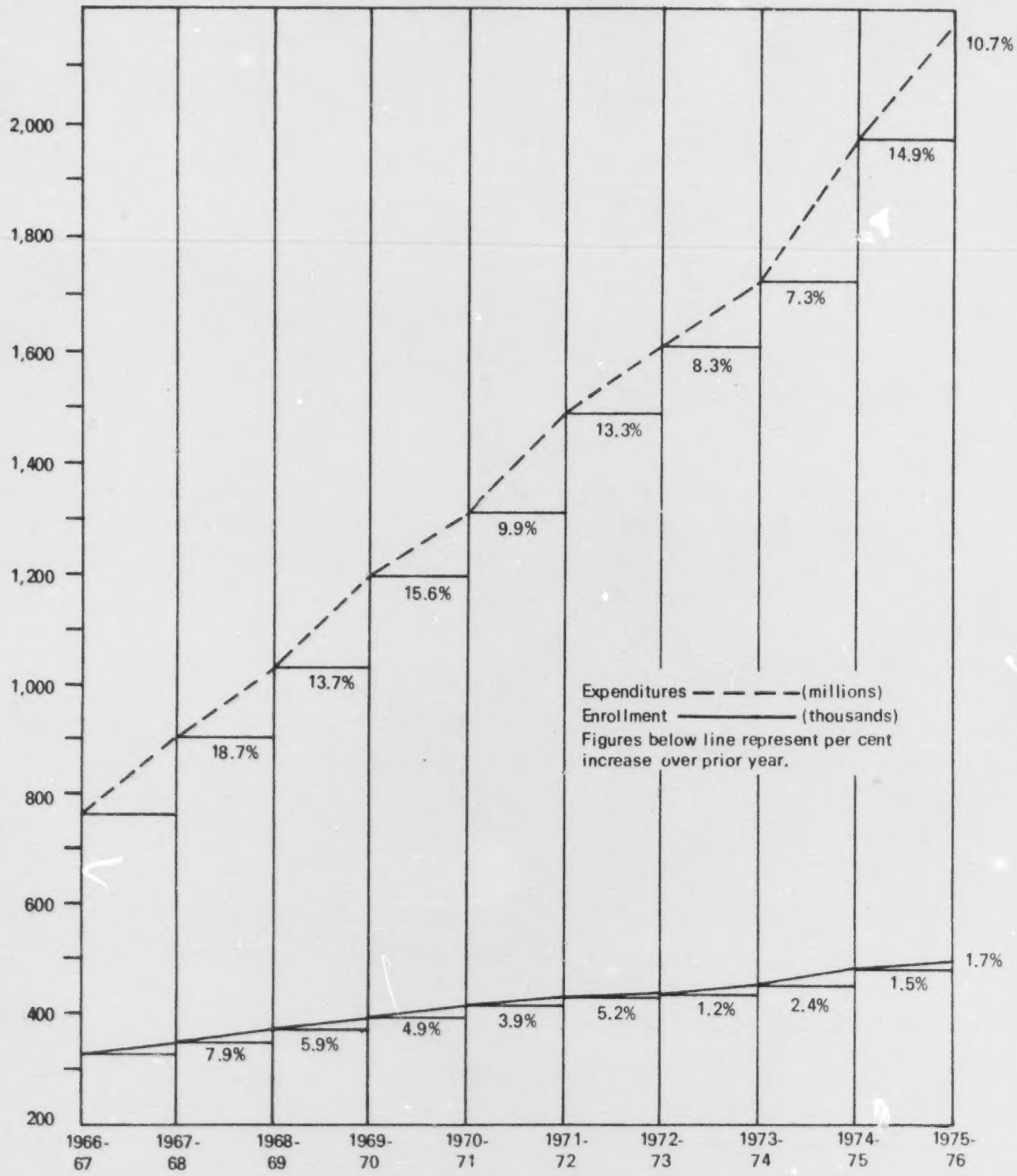
FIGURE 61
CURRENT FUNDS EXPENDITURES FOR FISCAL YEAR ENDING 1977



[1]Based on data from *Our Colleges and Universities Today* (Vol. XV, No. 3) Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

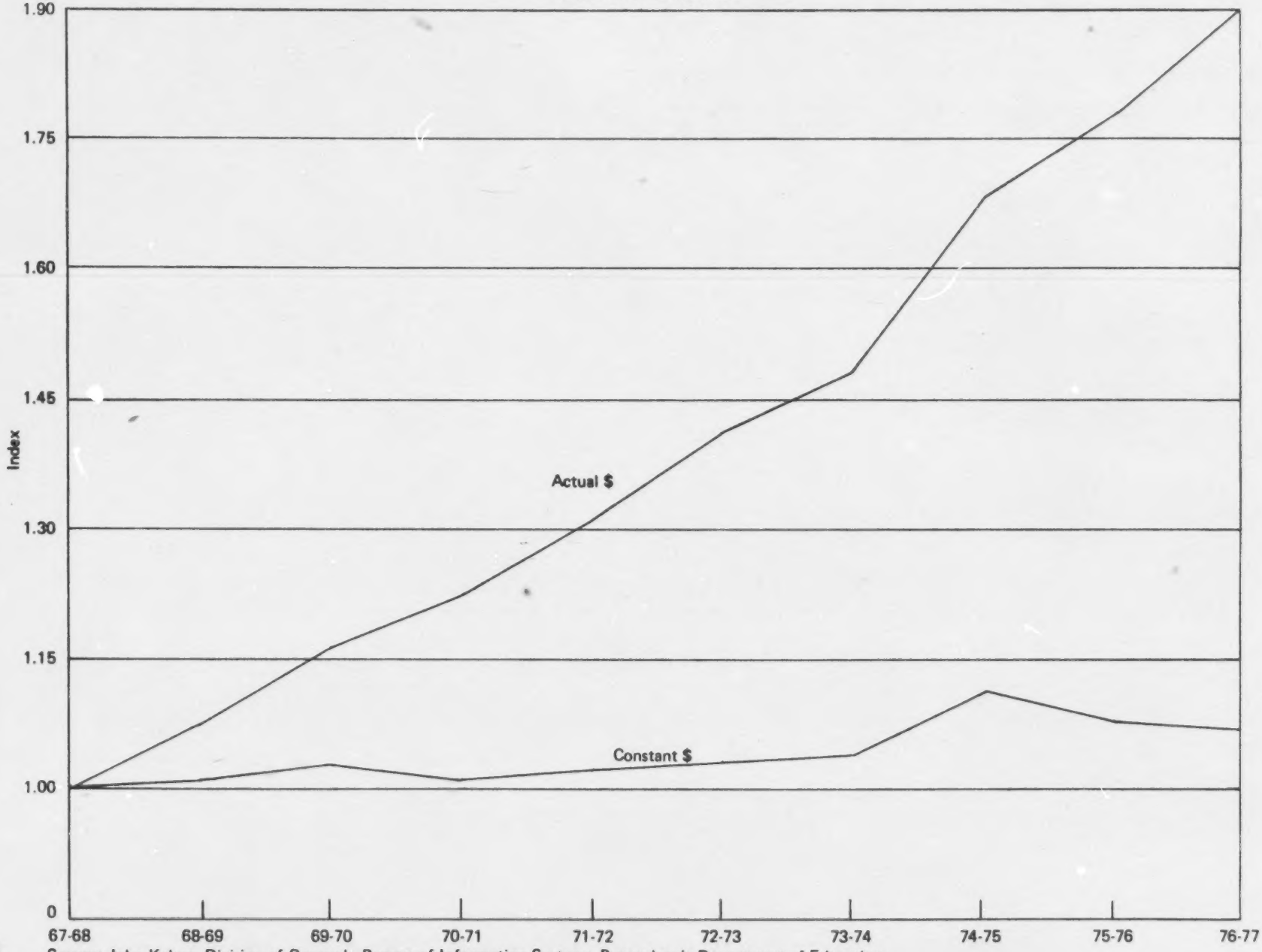
[2]Expenditures for medical school hospitals

FIGURE 62
A COMPARISON OF CURRENT FUNDS EXPENDITURES
TO TOTAL ENROLLMENT WITH PERCENT INCREASES FOR 1966-67 TO 1975-76



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

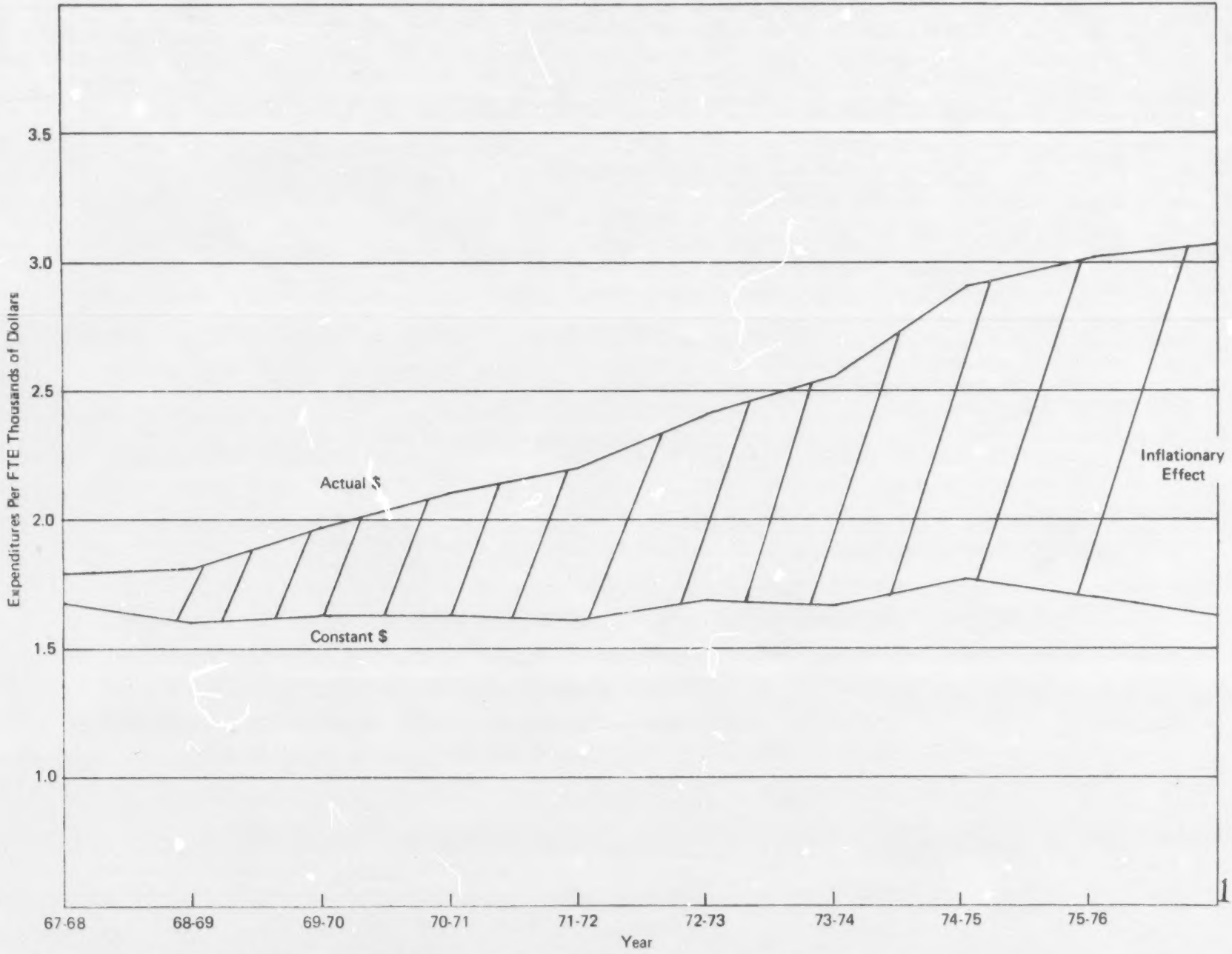
FIGURE 63
PENNSYLVANIA HIGHER EDUCATION EXPENDITURES PER FTE IN ACTUAL AND CONSTANT DOLLARS
(ALL INSTITUTIONS)



Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 64

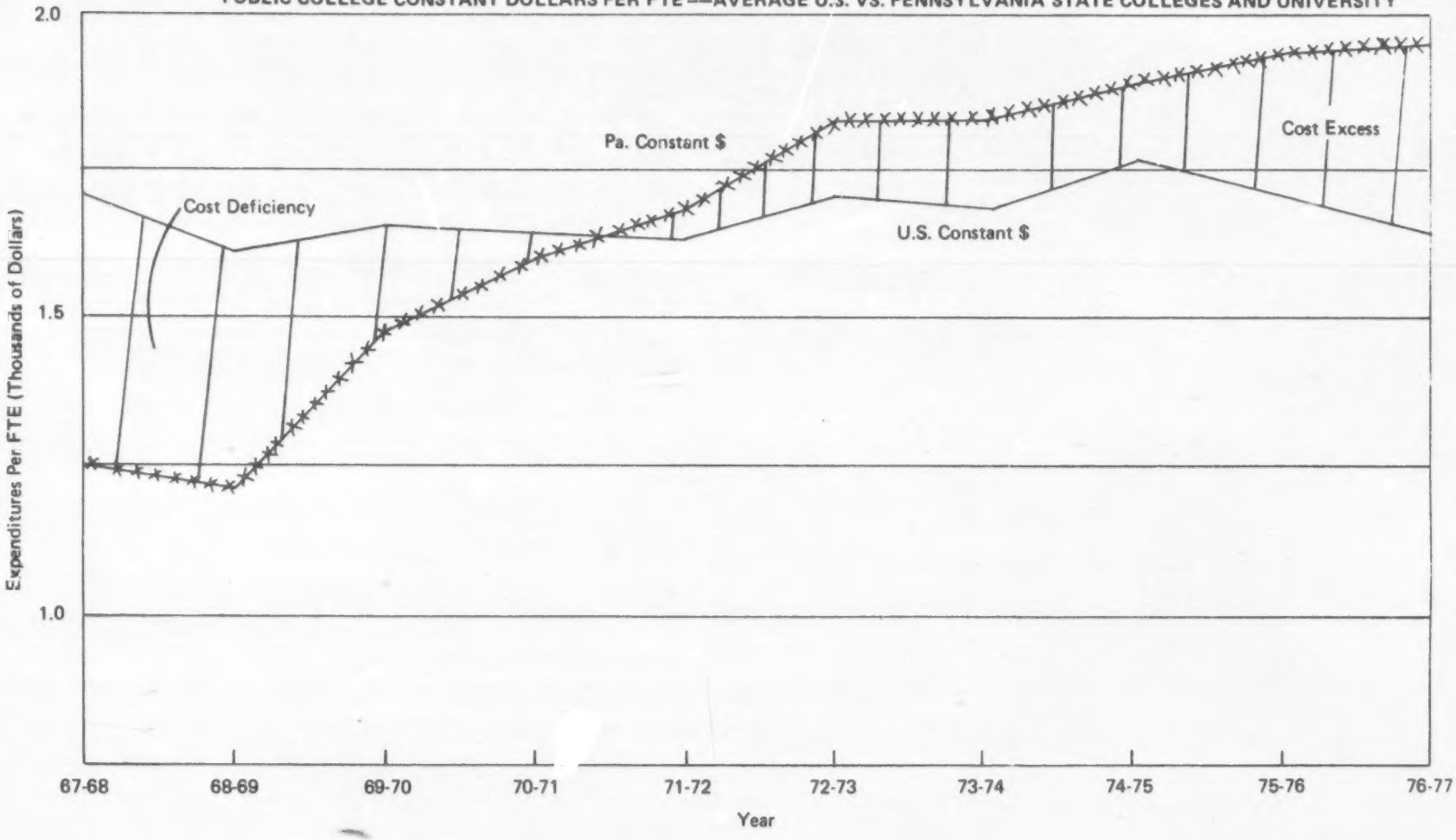
AVERAGE U.S. ACTUAL VS. CONSTANT FTE DOLLARS FOR HIGHER EDUCATION



Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 65

PUBLIC COLLEGE CONSTANT DOLLARS PER FTE —AVERAGE U.S. VS. PENNSYLVANIA STATE COLLEGES AND UNIVERSITY



Source: Jonn Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

Instructional Versus Non-instructional Costs

Figure 66 indicates current dollar increases in instructional and non-instructional per FTE costs that have occurred since 1967-68. The observed growth figures are indexes set at the 1967-68 value. As can be seen in Figure 66, non-instructional expenditures per student for the state colleges and university rose more sharply than did instructional costs. Instructional costs rose by about 50 percent while non-instructional actual dollar costs rose to a figure three and a half times larger during the same period.

Many of these increases are, of course, due to inflation. It may, therefore, be more instructive to look at non-instructional and instructional costs per FTE student after correction for inflation (1967 dollars) has been made. Figures 67 through 70 do this using 1967 constant dollars.

Figure 67 shows that non-instructional costs rose sharply in terms of percentage between school years 1969-70 and 1970-71 and have since fluctuated around that point At the same time the state college and university instructional expenditures have remained much the same, with some fluctuations, however.

Figure 68, on the other hand, shows a drop in real dollar non-instructional state-related university expenditures after 1969-70, rising sharply only after 1974-75. It also suggests that the state-related universities (Penn State, Temple, Pittsburgh, Lincoln) experienced an increase in real dollar instructional expenditures between 1969-70 and 1972-73 but that this recently has declined slightly.

Figure 69 indicates, for the state-aided sector, that non-instructional real dollar costs held steady through 1971-72 and then began a relatively sharp rise, with a marked decline between 1975-76 and 1976-77. Real dollar instructional costs, in contrast, fell off substantially between 1969-70 and 1970-71. Costs rose in 1974-75 and fell off again between 1974-75 and 1976-77.

Figure 70 shows real dollar expenditures for the private colleges and universities of Pennsylvania. The private schools have obviously held the line with regard to instructional costs but were sharply affected after 1973-74 by non-instructional costs, possibly due to increased costs of energy.

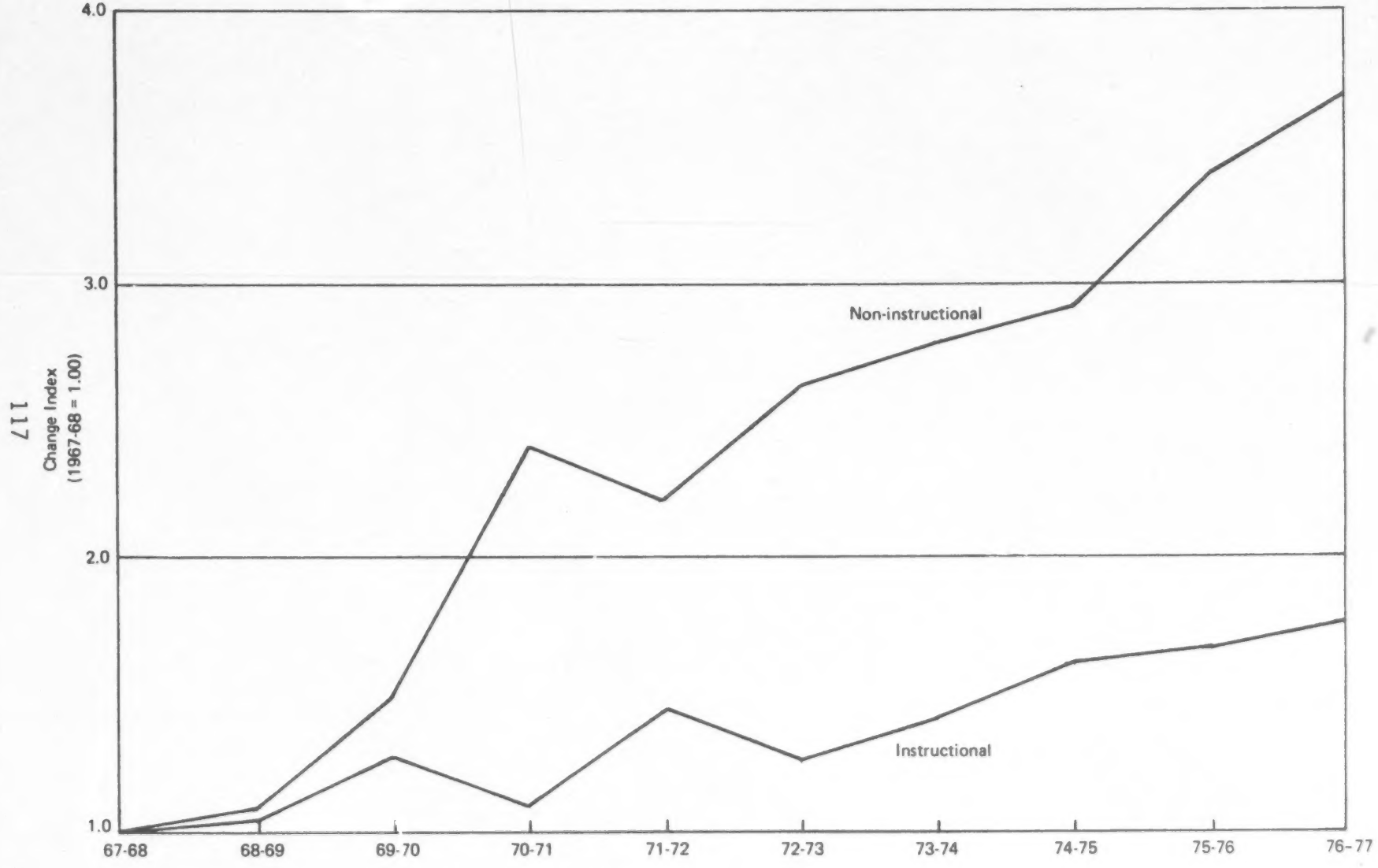
Physical Plant as a Source of Expenditure

The growth of the higher education plant in response to the pressures of increasing enrollments due to a high birth rate and the high value placed on a college education since World War II and Sputnik has been self-evident. Table 36 shows recent changes in Pennsylvania's physical facilities, including capital investment for higher education as a whole and for each type of institution. For example, the state-aided and the community colleges show a particularly high rate of growth in terms of capital investment, number of rooms and total square footage.

Higher Education Personnel

Professional people in higher education are critical to the success of institutions of higher education, just as they are to basic education. Figure 71, using manpower resource categories, breaks down professional personnel in higher education in 1976 with 59.6 percent designated as instruction/research personnel, 10.4 percent as administrative managerial personnel, 17.7 percent as specialist/supportive personnel and 12.3 percent as instructional or research assistants.

FIGURE 66
INSTRUCTIONAL AND NON-INSTRUCTIONAL TRENDS IN THE STATE COLLEGES AND UNIVERSITY EXPENDITURES PER FTE 1967-68 TO 1976-77[1]

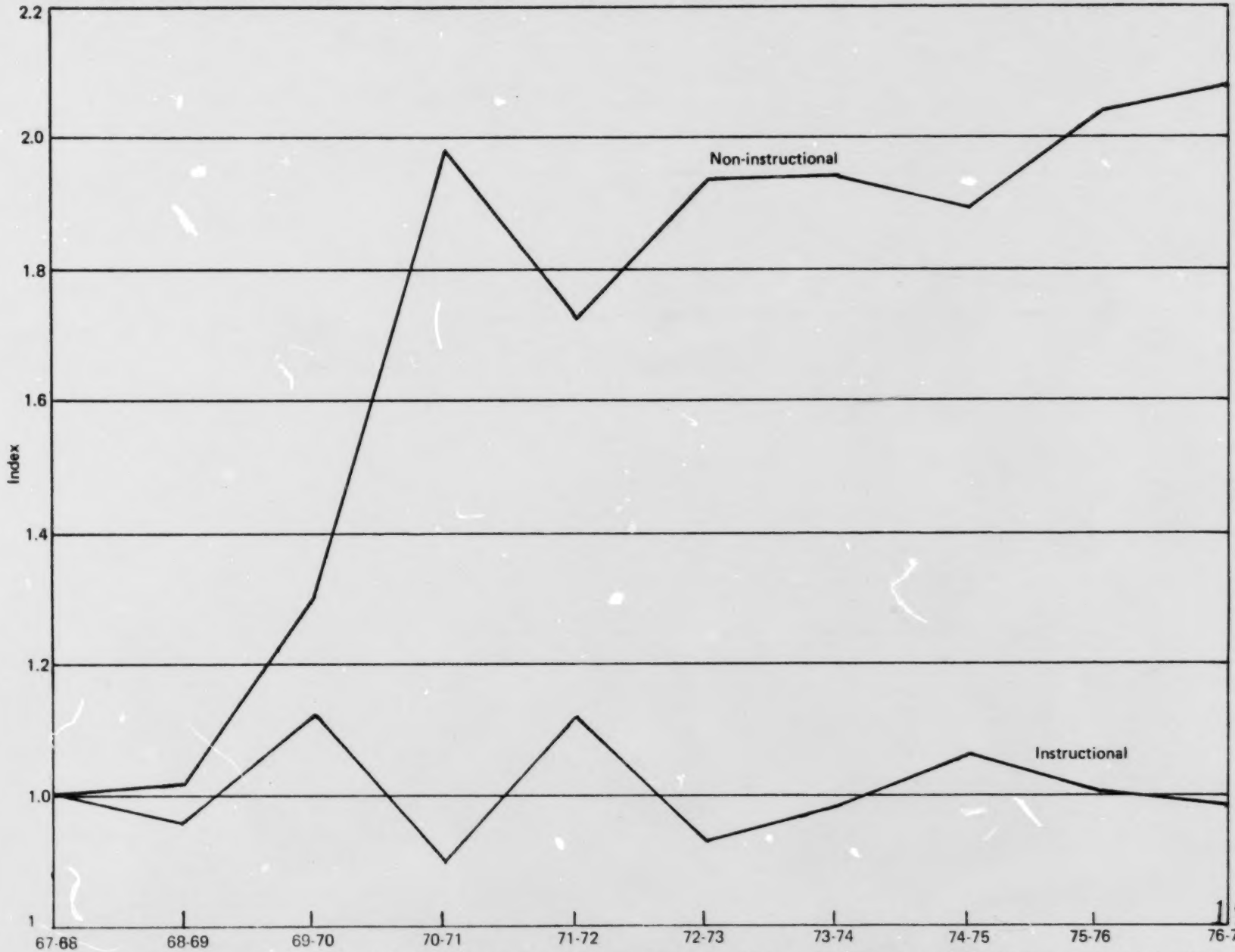


Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

[1]Now referred to as State Colleges and University

FIGURE 67

INSTRUCTIONAL AND NON-INSTRUCTIONAL EXPENDITURES PER FTE IN THE STATE COLLEGES AND UNIVERSITY (IN 1967 DOLLARS)*[1]

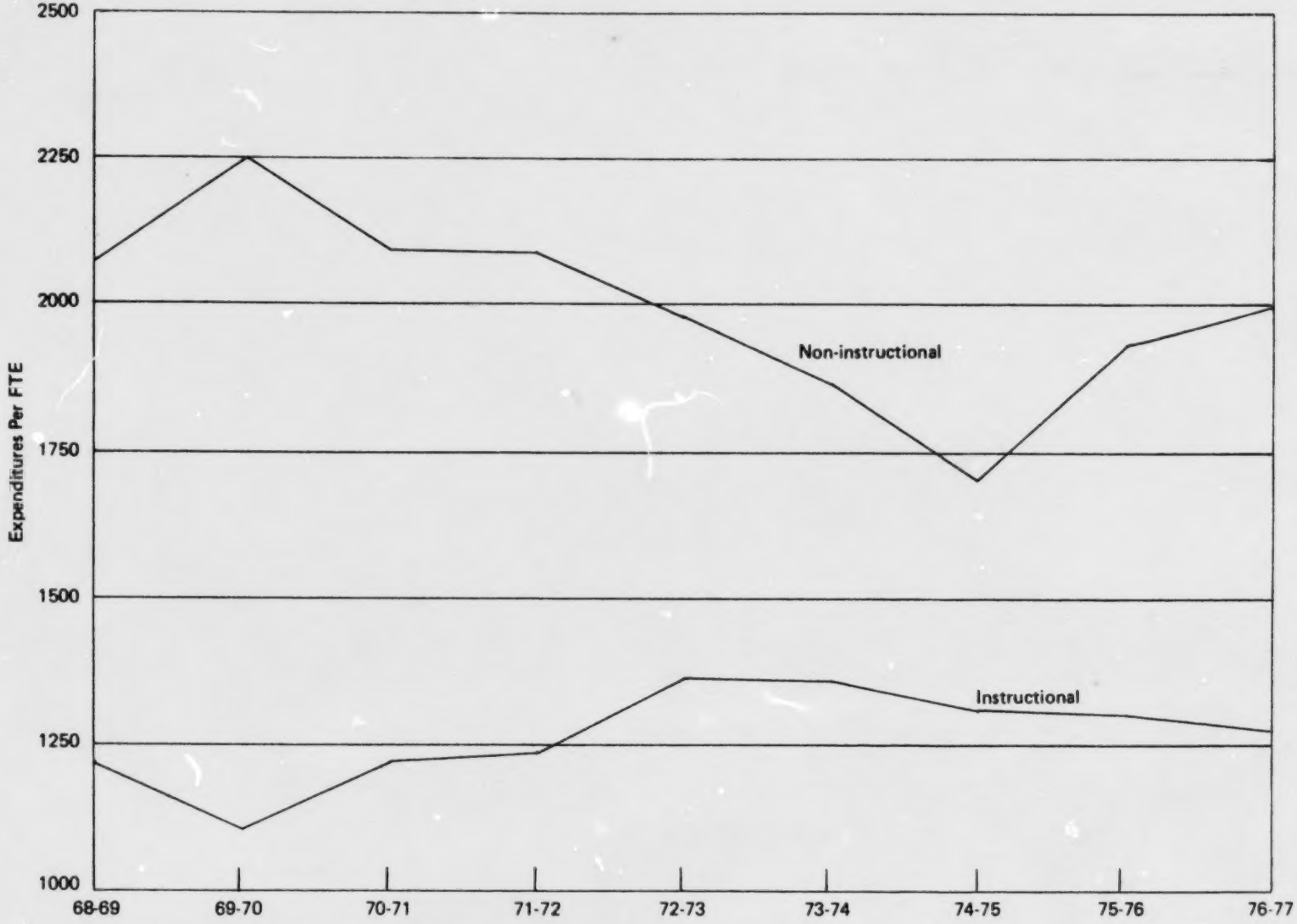


*Deflated by the Higher Education Price Index in D. Kent Halstead, *Higher Education Prices and Price Indexes* (Washington D.C., U.S. Government Printing Office, 1977), p. 19

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

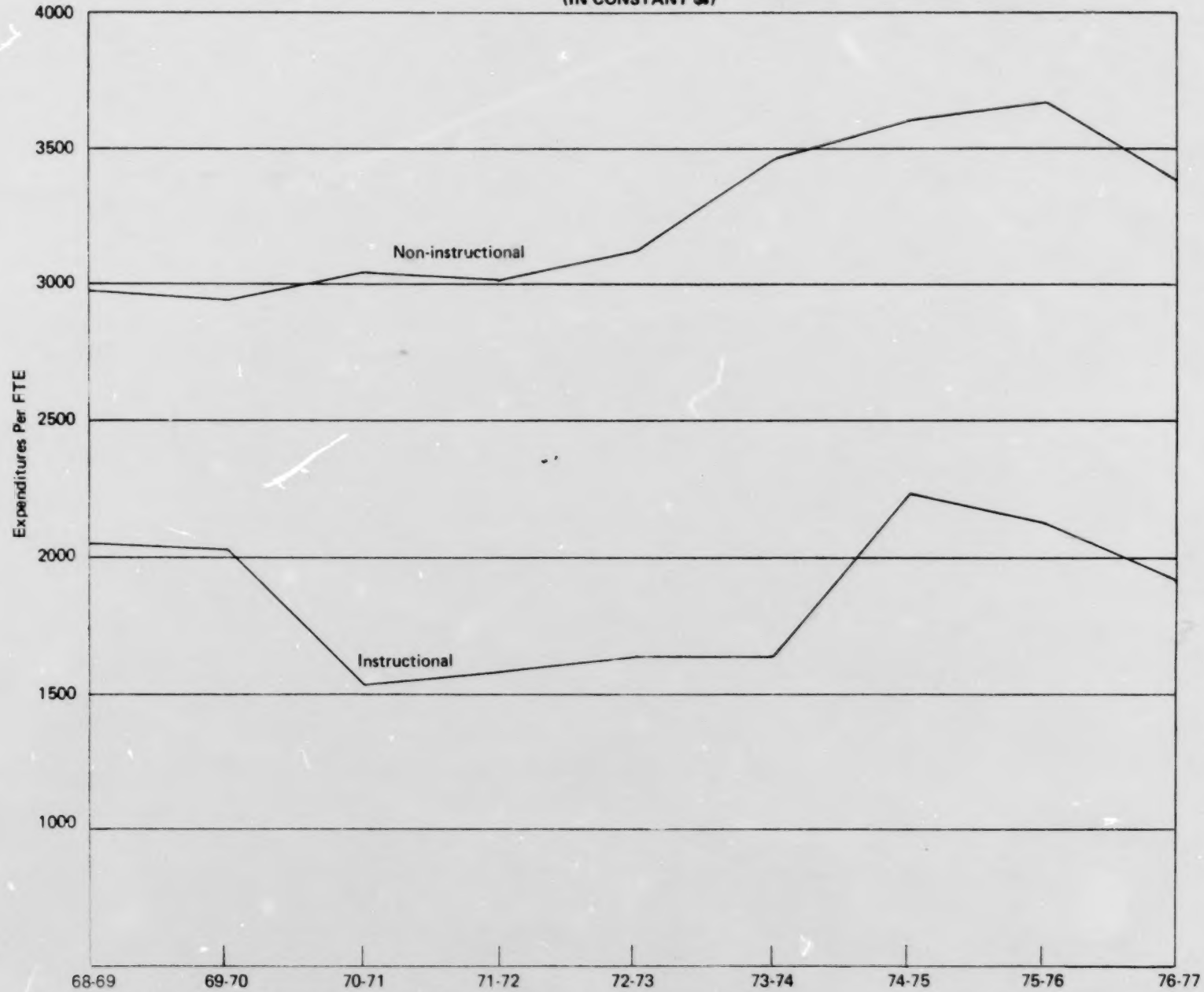
[1]Now referred to as State Colleges and University

FIGURE 68
INSTRUCTIONAL AND NON-INSTRUCTIONAL EXPENDITURES PER FTE IN THE STATE-RELATED SECTOR
(IN CONSTANT $s)



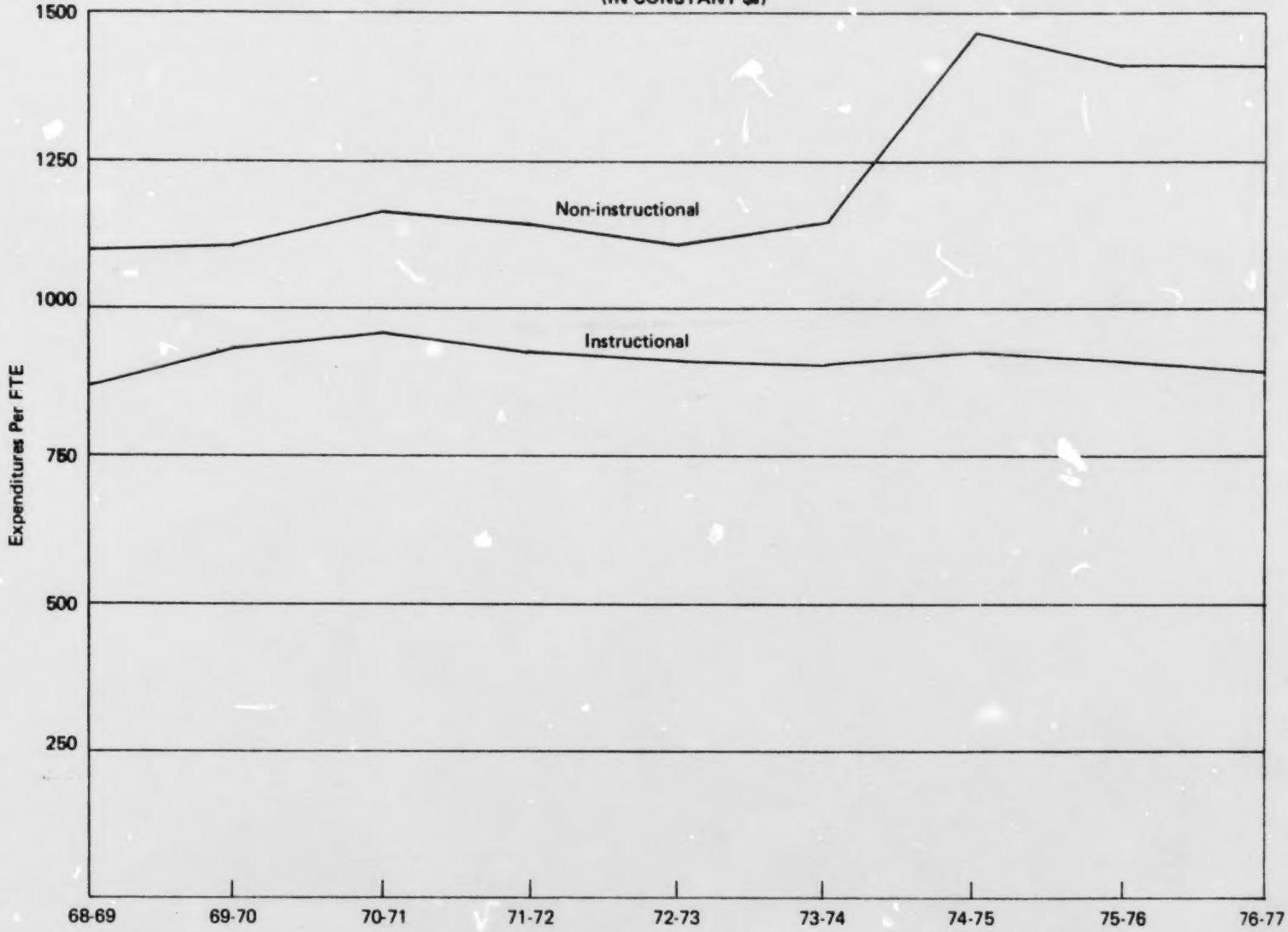
Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 69
INSTRUCTIONAL AND NON-INSTRUCTIONAL EXPENDITURES PER FTE IN THE STATE-AIDED SECTOR
(IN CONSTANT $s)



Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 70
INSTRUCTIONAL AND NON-INSTRUCTIONAL EXPENDITURES PER FTE IN THE PRIVATE SECTOR
(IN CONSTANT $s)



Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

Table 37

Changes from 1974 to 1977 in Pennsylvania's Higher Educational Physical Facilities Including Capital Investment Listed by Segment[1]

Facility	Year	All Institutions	State Colleges and University	State-Related	Private State-Aided	Private Colleges and Universities	Private Junior Colleges	Community Colleges	Proprietory
Total Capital Investment (in Thousands)	1974	$ 2,501,301	$ 390,188	$ 831,094	$ 319,591	$ 784,532	$ 19,859	$ 128,019	$ 28,018
	1975	2,676,543	404,509	844,911	425,393	798,630	18,859	[illegible],155	28,086
	1976	2,745,080	416,728	894,047	415,287	814,019	19,859	157,165	27,975
	1977	2,814,781	432,869	929,640	421,515	816,037	19,917	166,813	27,990
Percentage Change 1974-77		+ 12.53%	+ 10.94%	+11.9%	+31.9%	+ 4.0%	+ 0.3%	+ 30.3%	- 0.1%
Number of Buildings	1974	3,975	557	811	315	1,896	86	181	125
	1975	3,961	563	817	313	1,898	86	158	122
	1976	4,047	570	853	324	1,924	86	164	122
	1977	4,087	577	862	330	1,936	90	166	122
Percentage Change 1974-77		+ 2.81%	+ 3.59%	+ 6.3%	+ 4.8%	+ 2.1%	+ 4.7%	- 8.3%	- 2.4%
Number of Rooms	1974	226,299	44,238	51,794	30,470	87,260	3,101	6,718	2,621
	1975	230,376	45,109	51,981	31,825	88,021	3,099	7,559	2,685
	1976	231,877	42,793	52,296	32,590	90,199	3,105	8,085	2,712
	1977	237,983	45,372	53,093	33,963	91,093	3,170	8,504	2,691
Percentage Change 1974-77		+ 5.16%	+ 2.56%	+ 2.5%	+ 11.5%	+ 4.4%	+ 2.2%	+ 26.6%	+ 2.7%
Total Gross Square Feet	1974	110,791,507	18,995,474	28,785,554	15,366,540	40,429,543	1,327,231	4,157,127	1,940,686
	1975	113,410,504	19,441,137	28,862,296	16,162,789	40,845,052	1,332,179	4,640,703	2,071,453
	1976	115,961,087	19,862,780	29,600,007	16,609,149	41,403,906	1,332,179	5,023,747	2,074,424
	1977	117,228,087	20,429,204	29,980,120	16,988,449	41,228,730	1,367,422	5,105,199	2,074,068
Percentage Change 1974-77		+ 5.81%	+ 5.08%	+ 4.1%	+ 10.6%	+ 2.0%	+ 3.0%	+ 22.8%	+ 6.9%
Total Net Assignable Square Feet	1974	67,285,963	12,653,310	16,927,850	8,532,139	24,951,682	842,990	2,434,403	915,213
	1975	68,914,365	12,915,466	17,009,619	9,030,512	25,436,542	841,906	2,731,105	921,649
	1976	69,680,995	12,303,246	17,242,610	9,354,907	25,987,126	841,688	2,993,070	929,962
	1977	71,178,993	12,998,586	17,548,239	9,593,425	26,087,324	873,368	3,126,739	922,936
Percentage Change 1974-77		+ 5.8%	+ 2.7%	+ 3.7%	+ 12.4%	+ 4.6%	+ 3.6%	+ 28.4%	+ 0.8%
Percent Assignable Square Feet	1974	60.7%	66.6%	58.8%	55.5%	61.7%	63.5%	58.6%	47.2%
	1975	60.8	66.4	58.9	55.9	62.3	63.1	58.9	44.5
	1976	60.1	61.9	58.3	56.3	62.8	63.2	59.6	44.8
	1977	60.7	63.6	58.5	56.5	63.3	63.9	61.2	44.5
Percentage Difference 1974-77		0.0%	- 4.0%	- 0.3%	+ 1.0%	+ 1.6%	+ 0.4%	+ 2.6%	- 2.7%
Total Installed Student Stations	1974	837,334	210,285	212,588	65,630	266,392	17,856	45,733	19,059
	1975	852,641	214,135	212,819	62,795	267,907	17,883	56,776	19,535
	1976	795,049	209,859	158,955	63,618	267,817	17,865	36,262	19,882
	1977	820,693	223,612	163,584	68,184	268,227	18,615	58,013	19,667
Percentage Change 1974-77		- 2.0%	+ 6.3%	- 23.1%	+ 5.5%	+ 0.7%	+ 4.3%	+ 26.9%	+ 3.2%
Total Number Installed Dining Room Seats	1974	65,647	12,985	17,099	6,054	27,055	1,321	659	474
	1975	67,167	12,985	15,524	6,026	29,548	1,321	1,289	474
	1976	68,359	11,985	17,150	6,146	29,864	1,321	1,509	384
	1977	71,182	13,845	18,081	6,148	29,864	1,321	1,539	384
Percentage Change 1974-77		+ 8.4%	+ 6.6%	+ 5.7%	+ 1.6%	+ 10.4%	0.0%	+133.5%	- 19.0%
Total Number Installed Beds	1974	93,366	27,281	18,956	5,464	39,574	1,203	0	988
	1975	105,475	34,730	20,130	5,483	42,966	1,178	0	988
	1976	106,801	32,819	20,450	6,390	44,990	1,188	0	964
	1977	108,510	34,225	20,442	6,388	45,268	1,217	0	970
Percentage Change 1974-77		+ 16.2%	+ 25.5%	+ 8.4%	+ 16.9%	+ 14.4%	+ 1.2%	0.0.	- 1.9%
Total Number Vacant Beds	1974	1,869	926	0	2	462	81	0	398
	1975	1,872	920	0	2	471	81	0	398
	1976	1,835	920	0	2	446	69	0	398
	1977	1,871	920	0	2	484	69	0	398
Percentage Change 1974-77		+ 0.1%	- 0.6%	0.0%	0.0%	+ 4.8%	- 14.8%	0.0%	0.0%
Percent of Beds Vacant	1974	2.0%	3.4%	0.0%	0.04%	1.2%	6.7%	0%	40.3%
	1975	1.8	2.6	0.0	0.04	1.1	6.9	0	40.3
	1976	1.7	2.8	0.0	0.03	1.0	5.8	0	41.3
	1977	1.7	2.7	0.0	0.03	1.1	5.7	0	40.8
Percentage Difference 1974-77		- 0.3%	- 0.7%	0.0%	- 0.01%	- 0.1%	- 1.0%	0.0%	- 0.5%

[1] Data from "Perpetual Physical Facilities Inventory Master" computer printouts provided by the Division of Management Support, Bureau of Administrative Management, Pennsylvania Department of Education.

There has been considerable growth in professional staff for some institutional categories of Pennsylvania higher education. Table 37 indicates the numerical growth that occurred in each segment between 1967 and 1976 and the proportion represented by full-time or part-time staff. The segments that grew the most with regard to professional staffing were the community colleges and the state colleges and university. Growth in the proportion of part-time staff did occur on the two-year college level, both community and junior college, and in theological seminaries, but a decline in the proportion of part-time staff characterized most of the other segments. Figure 72 shows observed changes in total (full- and part-time combined) staffing that occurred from 1967 to 1976 in five of the tabled segments of Table 38.

The question arises, of course, as to what the future will hold. If we assume, as the Division of Education Statistics of the Pennsylvania Department of Education has assumed, that the faculty-student ratio will hold constant and that the number of college age youth will decline with a noncommittant slight decline in the participation rate of high school seniors, we see in Table 39 that there would be an overall decline of 7,000 (-12.7 percent) in full-time equivalent (FTE) faculty between 1977 and 1987 with the community colleges suffering virtually no decline and the state colleges and university suffering the greatest percentage decline (15.9 percent). Numerically, the private institutions will account for the largest decline and percentagewise they are seen as falling slightly below the state colleges and university at -15.2 percent.

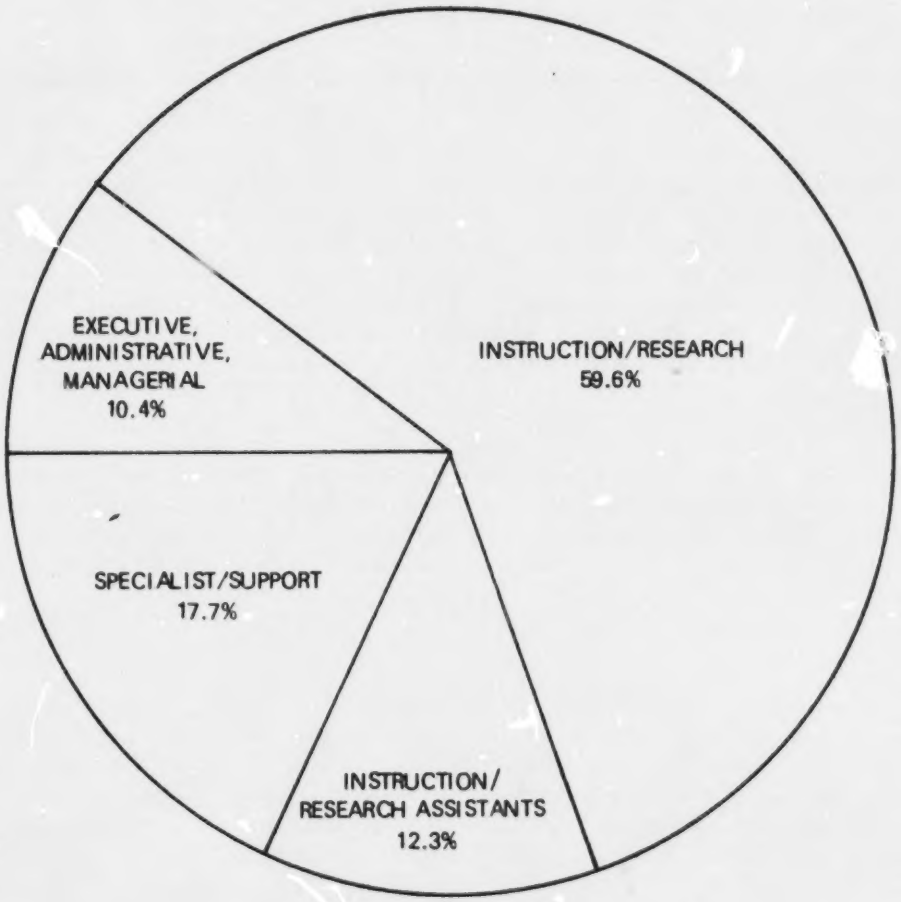
The accuracy of these projections will, of course, depend upon whether alterations in labor market demand, demand for adult education, aggressive recruiting (the private colleges, for example) and other factors will change the participation rate for various age groups in favorable rather than unfavorable directions.

Faculty Salaries

Faculty salaries constitute the major portion of instructional costs. Table 40 gives the average nine-month salary, in 1977-78, of faculty members when categorized by level (professor, associate professor, etc.) and sex for each of the major segments of higher education. The males, at every level, tend to earn more than the females with the average (mean) salary figure ranging from $11,665 for lecturer in private colleges and universities to $30,565 for full professors in private state-aided institutions.

It should be noted, however, that state colleges and university faculty salaries for a given academic position are fixed at the same figure regardless of sex and the difference here is due to males having a greater length of service and, possibly, due to females holding more of the lower ranking positions on a proportionate basis. The discrepancy between the salary, at all levels of the private college teacher and the salaries received by the state-owned and state-related faculties is consistent and substantial. Collective bargaining is, of course, guaranteed by law for faculty in the state-owned institutions. The salary differences are then a reflection of both differences in the source of funding and in the prevalence of collective bargaining in the public supported segments. Figures 73 and 74 graphically represent the findings of Table 40.

FIGURE 71
PROFESSIONAL PERSONNEL BY MANPOWER RESOURCE CATEGORY
IN PENNSYLVANIA'S INSTITUTIONS OF HIGHER EDUCATION, FALL 1976



Source: *Our Colleges and Universities Today* (Vol. XIV, No. 7). Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 38

Professional Staff Personnel by Institutional Category
Broken Out by Percentage Full- and Part-Time, Fall 1967-1976[1]

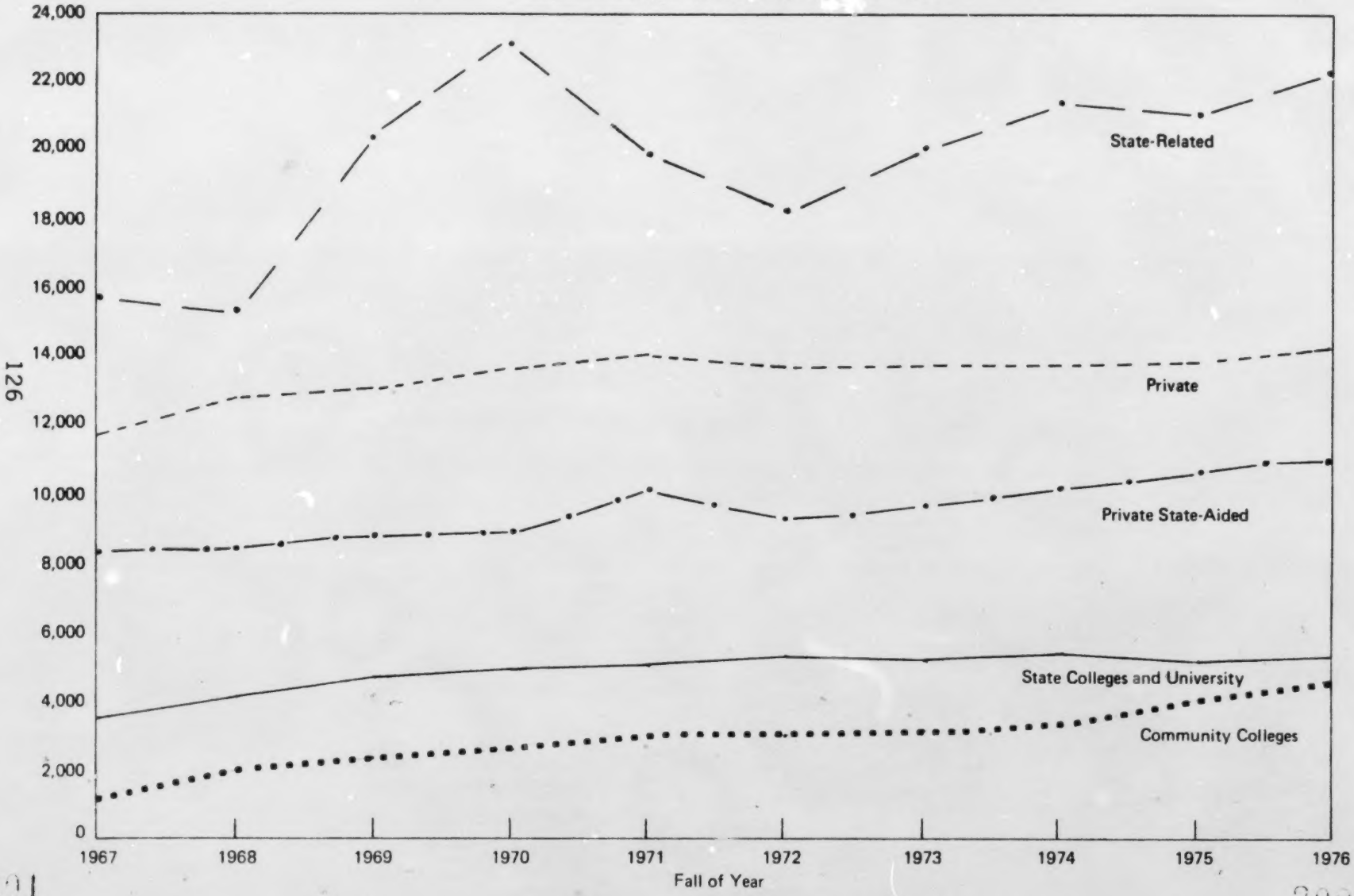
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976[2]
Total, All Institutions	41,873	44,008	50,650	54,482	54,150	51,619	54,054	56,247	57,059	60,089
Percent Full-Time	62.6	63.5	62.1	61.6	64.7	68.5	67.1	65.2	64.9	67.5
Percent Part-Time	37.4	36.5	37.9	38.4	35.3	31.5	32.9	34.8	35.1	32.5
State-Owned	3,569	4,174	4,784	4,976	5,106	5,378	5,343	5,483	5,220	5,446
Percent Full-Time	95.3	92.2	91.9	92.4	93.1	90.6	91.1	90.0	96.1	95.4
Percent Part-Time	4.7	7.8	8.1	7.6	6.9	9.4	8.9	10.0	3.9	4.6
State-Related[2]	15,799	15,432	20,466	23,165	20,017	18,443	20,150	21,545	21,168	22,476
Percent Full-Time	52.7	57.1	54.0	52.6	63.4	69.7	66.6	62.6	63.1	64.6
Percent Part-Time	47.3	42.9	46.0	47.4	36.6	30.3	33.4	37.4	36.9	35.4
Private State-Aided[2]	8,450	8,563	8,857	8,956	10,212	9,360	9,848	10,344	10,815	11,081
Percent Full-Time	54.1	47.7	47.3	48.9	40.8	46.9	46.7	47.9	46.4	61.5
Percent Part-Time	45.9	52.3	52.7	51.1	59.2	53.1	53.3	52.1	53.4	38.5
Private	11,931	12,871	13,200	13,778	14,156	13,767	13,929	13,851	13,992	14,422
Percent Full-Time	70.9	71.7	72.3	72.4	72.6	71.6	72.6	72.0	71.9	71.1
Percent Part-Time	29.1	28.3	27.7	27.6	27.4	28.4	27.4	28.0	28.1	28.9
Community Colleges	1,335	2,084	2,461	2,684	3,131	3,085	3,202	3,425	4,112	4,758
Percent Full-Time	66.6	64.1	66.2	65.8	64.5	70.3	67.0	64.4	58.0	51.6
Percent Part-Time	33.4	35.9	33.8	34.2	35.5	29.7	33.0	35.6	42.0	48.4
Private Jr. Colleges	457	548	544	612	615	550	487	534	634	699
Percent Full-Time	69.1	66.4	68.6	70.9	70.7	68.7	66.7	59.2	52.7	54.4
Percent Part-Time	30.9	33.6	31.4	29.1	29.3	31.3	33.3	40.8	47.3	45.6
Proprietary Schools[3]	-	-	-	-	570	695	734	739	769	861
Percent Full-Time	-	-	-	-	78.2	79.9	75.6	74.6	77.8	80.3
Percent Part-Time	-	-	-	-	21.8	20.1	24.4	25.4	22.2	19.7
Theological Seminaries	332	336	338	311	343	341	361	326	349	346
Percent Full-Time	76.2	78.9	75.4	75.2	71.1	76.2	67.9	69.6	67.9	67.6
Percent Part-Time	23.8	21.1	24.6	24.8	28.9	23.8	32.1	30.4	32.1	32.4

[1]Includes estimated data for nonresponding institutions and, for the purposes of trend analysis, institutions were listed each year in the institutional categories appropriate as of 1976. Data taken from Table 1 of Our Colleges and Universities Today (Vol. XIV, No. 7) published by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2]Included in 1976 for the first time, teaching hospital personnel in Hershey Medical Center of The Pennsylvania State University, in Hahnemann Medical College and in the Jefferson Medical College of Thomas Jefferson University. Also, 1976 reflects a shift of volunteer physicians at Jefferson from part-time to the full-time category.

[3]Also includes Thaddeus Stevens School of Technology.

FIGURE 72
PROFESSIONAL PERSONNEL (FULL AND PART-TIME) IN SELECTED HIGHER EDUCATION INSTITUTIONAL CATEGORIES, FALL 1967-1976[1]



[1]Based on data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 39

Full-Time Equivalent (FTE) Professional Personnel in Institutions of Higher Education in Pennsylvania by Institutional Category: Actual 1968 to 1977 and Projected 1978 to 1987[1]

Fall	All Institutions	State Colleges and University	State-Related Commonwealth Universities	Community Colleges	Private Institutions
1968	33,305	[illegible],986	10,930	1,548	16,841
1969	37,381	4,544	13,698	1,885	17,254
1970	40,190	4,768	15,386	2,025	18,011
1971	42,440	4,882	15,999	2,334	18,727
1972	41,354	5,064	14,709	2,458	18,513
1973	41,937	5,053	15,339	2,428	18,485
1974	43,114	5,134	15,944	2,565	18,831
1975	43,151	5,083	15,464	2,925	19,004
1976[2]	47,184	5,284	16,881	3,020	21,231
1977[3]	48,000	5,300	16,900	3,100	21,800
			Projected[4]		
1978	48,100	5,300	17,000	3,100	21,700
1979	48,200	5,200	17,100	3,200	21,700
1980	48,000	5,200	17,100	3,200	21,500
1981	47,500	5,100	16,900	3,200	21,200
1982	46,600	5,000	16,700	3,200	20,600
1983	45,700	4,800	16,400	3,200	20,200
1984	44,500	4,700	15,900	3,200	19,600
1985	43,300	4,500	15,500	3,100	19,100
1986	42,000	4,400	15,100	3,100	18,400
1987	41,000	4,300	14,700	3,100	17,900
Percent Change	-12.7	-15.9	-11.5	0.0	-15.2

[1]From Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2]Includes, for the first time in 1976, personnel who worked in the teaching hospitals that are an integral part of the schools of medicine at the Hershey Medical Center of The Pennsylvania State University, Hahnemann Medical College and Jefferson Medical College of the Thomas Jefferson University.

[3]Estimated.

[4]Present student/faculty ratio applied to enrollment projections which in turn assume a slight decline in participation rate and the effect of the birth decline.

Table 40

A Comparison of the State Colleges and University with Other Pennsylvania College and University Categories Within the State as Regards Nine-Month Faculty Salaries by Sex and Academic Level[1]

Rank	Sex	State Colleges & University	State-Related	Private State-Aided	Private Colleges & Universities	Community Colleges
Professor	Male	$26,054	$28,799	$30,565	$23,328	$20,650
	Female	25,695	25,865	27,041	19,792	20,002
	Total	26,016	28,536	30,406	23,022	20,511
Associate Professor	Male	$21,231	$20,647	$21,199	$17,767	$18,174
	Female	21,164	20,266	19,493	16,418	18,054
	Total	21,218	20,611	20,946	17,554	18,137
Assistant Professor	Male	$17,062	$16,466	$17,512	$14,694	$16,226
	Female	16,885	15,700	16,340	13,765	15,662
	Total	17,005	16,266	17,259	14,432	16,003
Instructor	Male	$13,441	$13,578	$15,828	$12,066	$13,060
	Female	13,278	13,193	12,964	11,273	12,647
	Total	13,355	13,415	14,458	11,690	12,894
Lecturer	Male	*	$16,949	$17,333	$11,233	$13,684
	Female	*	12,627	*	12,036	12,647
	Total	*	15,440	17,333	11,665	13,166
No Rank Designated	Male	*	$10,296	$12,767	$12,257	*
	Female	*	11,065	9,630	*	*
	Total	*	10,723	11,871	12,257	*

[1]Taken from computer printout provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education. Totals are weighted averages of the male and female mean salary figures for 1977-78.

Table 41 compares the four-year college salary findings of Table 40 with comparable public college salary figures by academic level and sex for the United States as a whole and the northeastern states. Here we find, with the exception of the private colleges and universities, that Pennsylvania mean faculty salaries currently exceed those for the country and the northeastern states as a whole. Pennsylvania is plainly competitive with regard to salaries.

Postsecondary Education and the High School Graduate

The traditional source of students in postsecondary education has been the high school graduate. As indicated earlier, however, this source is a function of births some seventeen or eighteen years earlier. The number of graduates and therefore the number of young people entering college or other higher educational institutions has been rising in recent decades due to both the baby boom and to the incentive of a good labor market for college graduates.

Since 1972, however, there has been a fluctuation in the number of graduates, peaking in the year 1976 at 190,093 graduates. During the period from 1968 to 1977, moreover, the percentage going on to formal study beyond high school has dropped from a high of 57 percent in 1969 to about 48 percent in 1977 (Table 42). The proportion going on to a college or university has similarly dropped from 45 percent in 1971 to 42 percent in 1977. The proportion for schools other than a college or university has dropped much more steadily from 13 percent in 1968 to 6.4 percent in 1977. This is due, in part, to the change in status of some of Pennsylvania's proprietary scholls to higher education institutions that has occurred.

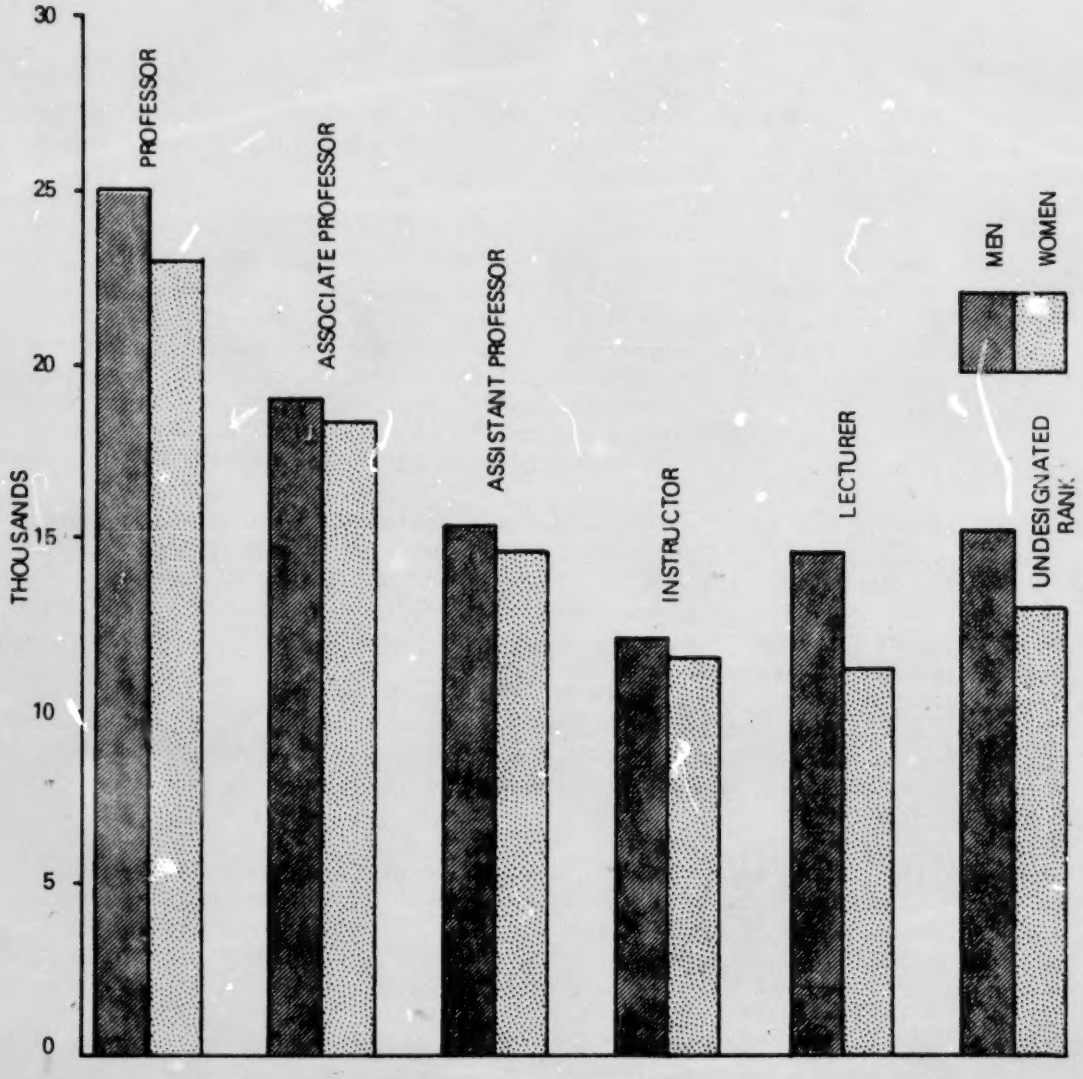
It might also be noted in Table 42 that a substantially larger proportion of the nonpublic school graduates have gone on to a college or university than has been true for public school graduates, e.g., about 56 percent of 1977 nonpublic versus about 40 percent of the 1977 public school graduates went on to college. Figure 75 graphically indicates the changes in the proportion entering different higher education and postsecondary activities between 1968 and 1977.

Figure 76 breaks down for three recent years the proportion of public high school graduates entering a degree granting institution. As can be seen here, the participation rates for both sexes and the nonwhite minority have been converging in contrast to 1973.

Figure 77 graphically indicates the changes in participation rates over time for high school graduates from both public and nonpublic high schools who go in for some form of continuing education. Figure 78 does likewise for only those graduates who went on to a college or university. Relatively stable participation rates for the period from 1978 to 1986 are also assumed in the projections of Figure 78.

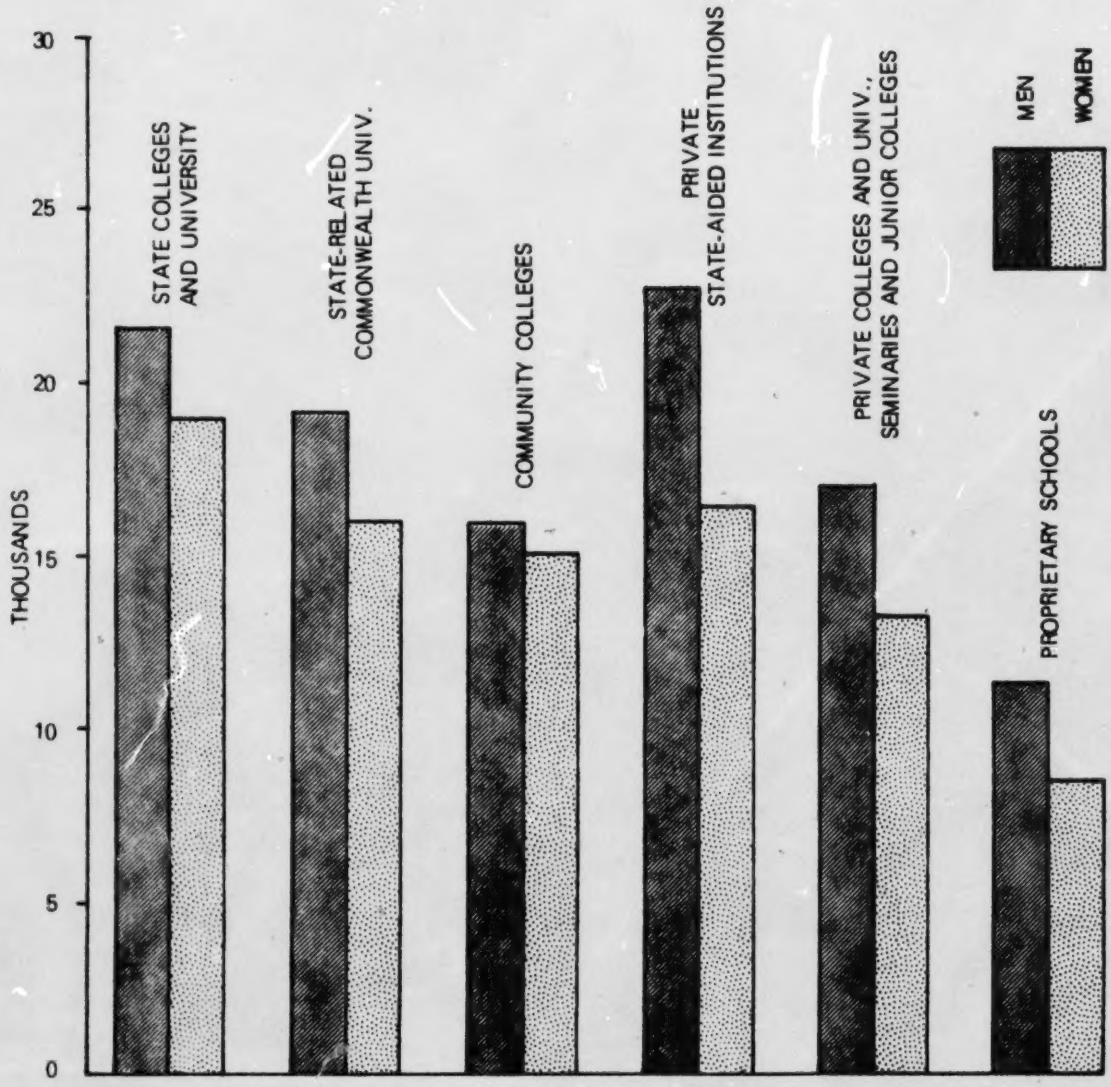
Tables 43 and 44 show both actual and projected numbers and proportions for graduates going on to college both in and out of Pennsylvania. Table 44 suggests that of those entering college, the proportion going out of state will stabilize at a value of approximately 17 percent and also that the absolute number going on will fall substantially between 1976-77 and 1993-94. The issue of future enrollments for college will be dealt with in some detail later in this chapter.

FIGURE 73
AVERAGE SALARIES OF FULL-TIME INSTRUCTIONAL FACULTY EMPLOYED
ON A CONTRACT OF 9 MONTHS BY SEX AND RANK, 1976-77



Source: *Our Colleges and Universities Today* (Vol. XIV, No. 7). Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 74
AVERAGE SALARIES OF FULL-TIME INSTRUCTIONAL FACULTY EMPLOYED ON A CONTRACT OF 9 MONTHS BY SEX AND INSTITUTIONAL CATEGORY, 1976-77



Source: *Our Colleges and Universities Today* (Vol. XIV, No. 7), Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 41

A Comparison of 1977-78 University and Four-Year College Salaries (Nine-Month) for the Nation and the Northeastern States (Pennsylvania Excluded) with Comparable Mean Salary Figures for Pennsylvania Including its State Colleges and University Broken Down by Academic Level and Sex and Locus of Financial Support[1]

Academic Level	Sex	United States (Public)	North-eastern (Public)	Pennsylvania Colleges & Universities			
				State Colleges & University	State-Related	Private State-Aided	Private Colleges & Universities
Professor	Male	$24,367	$22,920	$26,054	$28,799	$30,565	$23,328
	Female	23,284	23,103	25,695	25,865	27,041	19,792
	Total	24,242	22,952	26,016	28,536	30,406	23,022
Associate Professor	Male	$19,138	$19,377	$21,231	$20,647	$21,199	$17,767
	Female	18,554	17,673	21,164	20,266	19,493	16,418
	Total	19,035	19,269	21,218	20,611	20,946	17,554
Assistant Professor	Male	$15,869	$15,524	$17,062	$16,466	$17,512	$14,694
	Female	15,318	15,11[illegible]	16,885	15,700	16,340	13,765
	Total	15,694	15,394	17,005	16,266	17,259	14,432
Instructor	Male	$13,068	$12,900	$13,441	$13,578	$15,828	$12,066
	Female	12,39[illegible]	12,239	13,278	13,193	12,964	11,273
	Total	12,71[illegible]	12,374	13,355	13,415	14,458	11,690
Lecturer	Male	$14,623	$14,382	*	$16,949	$17,333	$11,233
	Female	12,719	11,486	*	12,627	*	12,036
	Total	13,805	13,045	*	15,440	17,333	11,665
No Rank Designated	Male	$16,547	$22,905	*	$10,296	$12,767	$12,257
	Female	14,163	*	*	11,065	9,630	*
	Total	15,598	$22,905	*	10,723	11,871	12,257

[1]Mean nine-month faculty salary data for United States and northeastern states taken from preliminary report provided by the Data Management Center, Computer Operations Division, HEW. Data for Pennsylvania taken from computer printout provided by the Division of Education Statistics, Bureau of Information Systems. Totals are a weighted average, by sex, of the mean salaries for each sex.

*None reported.

Table 42

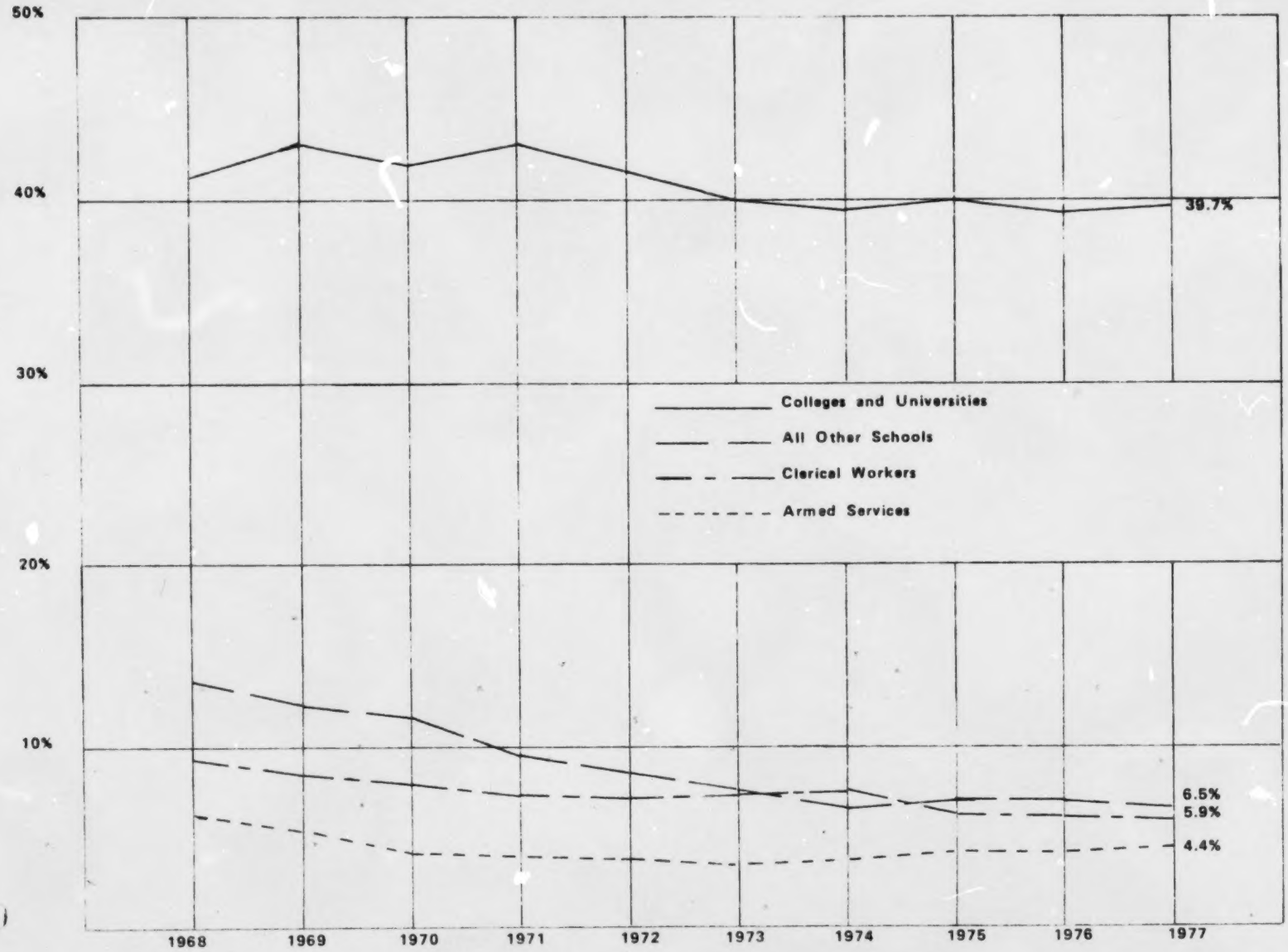
Public and Nonpublic High School Graduates and Their Post-High School Educational Activities as of October Following Graduation 1968 Through 1977

Year of High School Graduation	Number of High School Graduates	Total Continuing Formal Study		College or University		Other Schools[1]	
		Number	Percent	Number	Percent	Number	Percent
1968							
All Graduates	167,533	94,458	56.4	72,386	43.2	22,072	13.2
Public	137,079	75,244	54.9	59,464	41.2	18,780	13.7
Nonpublic	30,454	19,214	63.1	19,922	52.3	3,292	10.8
1969							
All Graduates	178,397	101,685	57.0	80,388	45.1	21,297	11.9
Public	146,920	81,429	55.4	63,336	43.1	18,093	12.3
Nonpublic	31,477	20,256	64.4	17,052	54.2	3,204	10.2
1970							
All Graduates	182,690	101,366	55.5	80,651	44.1	20,715	11.4
Public	151,014	81,090	53.7	63,355	42.0	17,735	11.7
Nonpublic	31,676	20,276	64.0	17,296	54.6	2,980	9.4
1971							
All Graduates	182,690	99,840	54.6	82,729	45.3	17,111	9.3
Public	153,568	81,063	52.8	66,307	43.2	14,756	9.6
Nonpublic	29,122	18,777	64.5	16,422	56.4	2,355	8.1
1972							
All Graduates	186,569	97,816	52.4	81,906	43.9	15,910	8.5
Public	157,415	79,249	50.3	65,648	41.7	13,601	8.6
Nonpublic	29,154	18,567	63.7	16,258	55.8	2,309	7.9
1973							
All Graduates	181,621	90,451	49.8	76,734	42.2	13,717	7.6
Public	154,045	73,311	47.6	61,574	40.0	11,737	7.6
Nonpublic	27,576	17,140	62.2	15,160	55.0	1,980	7.2
1974							
All Graduates	187,296	90,381	48.3	78,128	41.7	12,253	6.6
Public	159,934	73,549	46.0	63,140	39.5	10,409	6.5
Nonpublic	27,362	16,832	61.5	14,988	54.8	1,844	6.7
1975							
All Graduates	189,955	93,858	49.4	80,860	42.6	12,998	6.8
Public	163,124	76,356	46.8	65,229	40.0	11,127	6.8
Nonpublic	26,831	17,502	65.2	15,631	58.3	1,871	7.0
1976							
All Graduates	190,093	92,213	48.5	79,404	41.8	12,809	6.7
Public	163,812	75,425	46.0	64,354	39.3	11,071	6.8
Nonpublic	26,281	16.788	63.9	15,050	57.3	1,738	6.6
1977							
All Graduates	186,936	90,481	48.4	78,524	42.0	11,957	6.4
Public	160,665	74,214	46.2	63,851	39.7	10,363	6.5
Nonpublic	26,271	16,267	61.9	14,673	55.9	1,594	6.1

[1]Includes schools for business, nursing and trades.

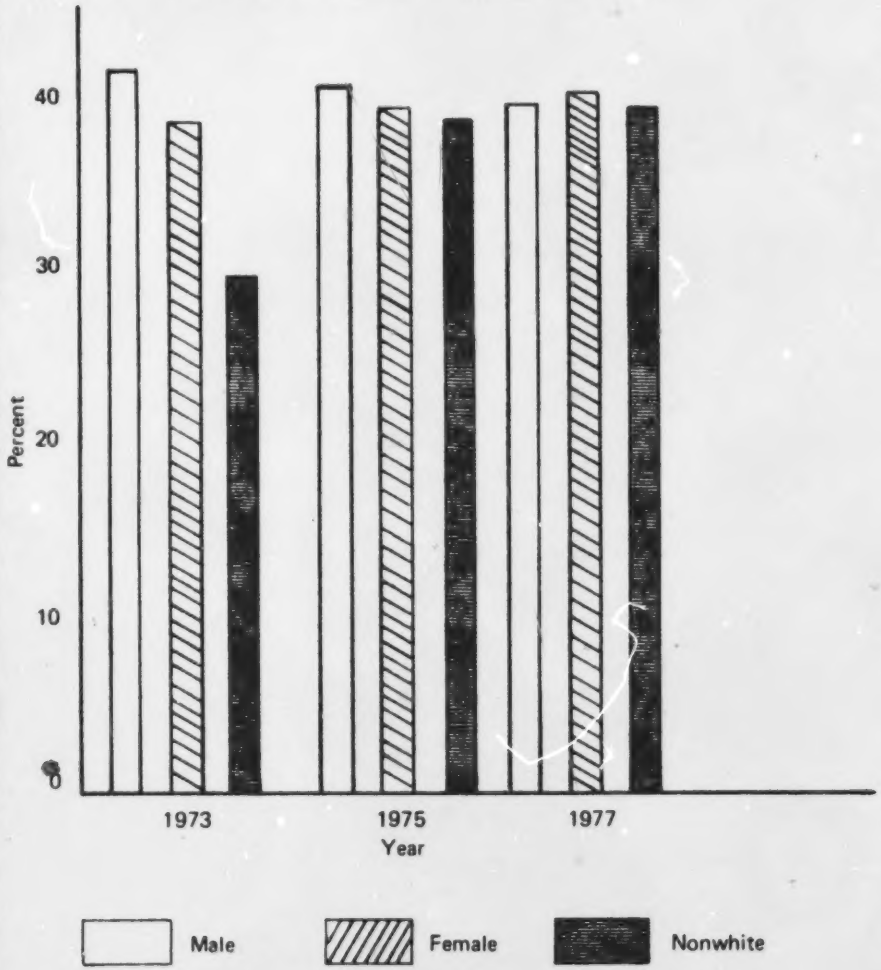
Source: "Public Secondary School Report" and "Nonpublic Secondary School Report," Division of Education Statistics, Bureau of Information Systems, Department of Education.

FIGURE 75
PERCENTAGE OF PUBLIC SCHOOL 12TH-GRADE GRADUATES ENTERING SELECTED POST-HIGH SCHOOL ACTIVITIES 1968 THROUGH 1977



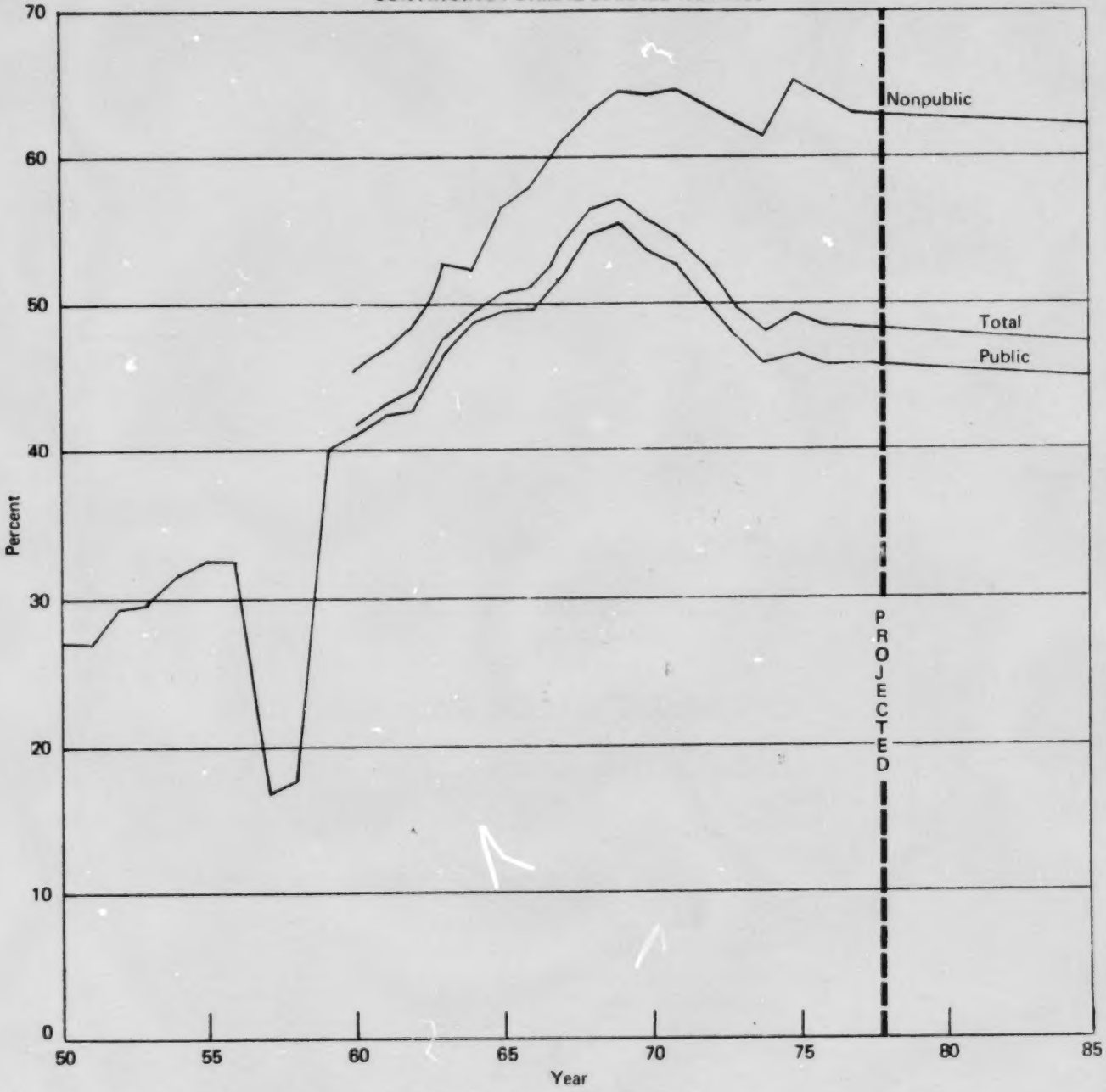
Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 76
PROPORTION OF PUBLIC HIGH SCHOOL GRADUATES ENTERING A DEGREE GRANTING INSTITUTION



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

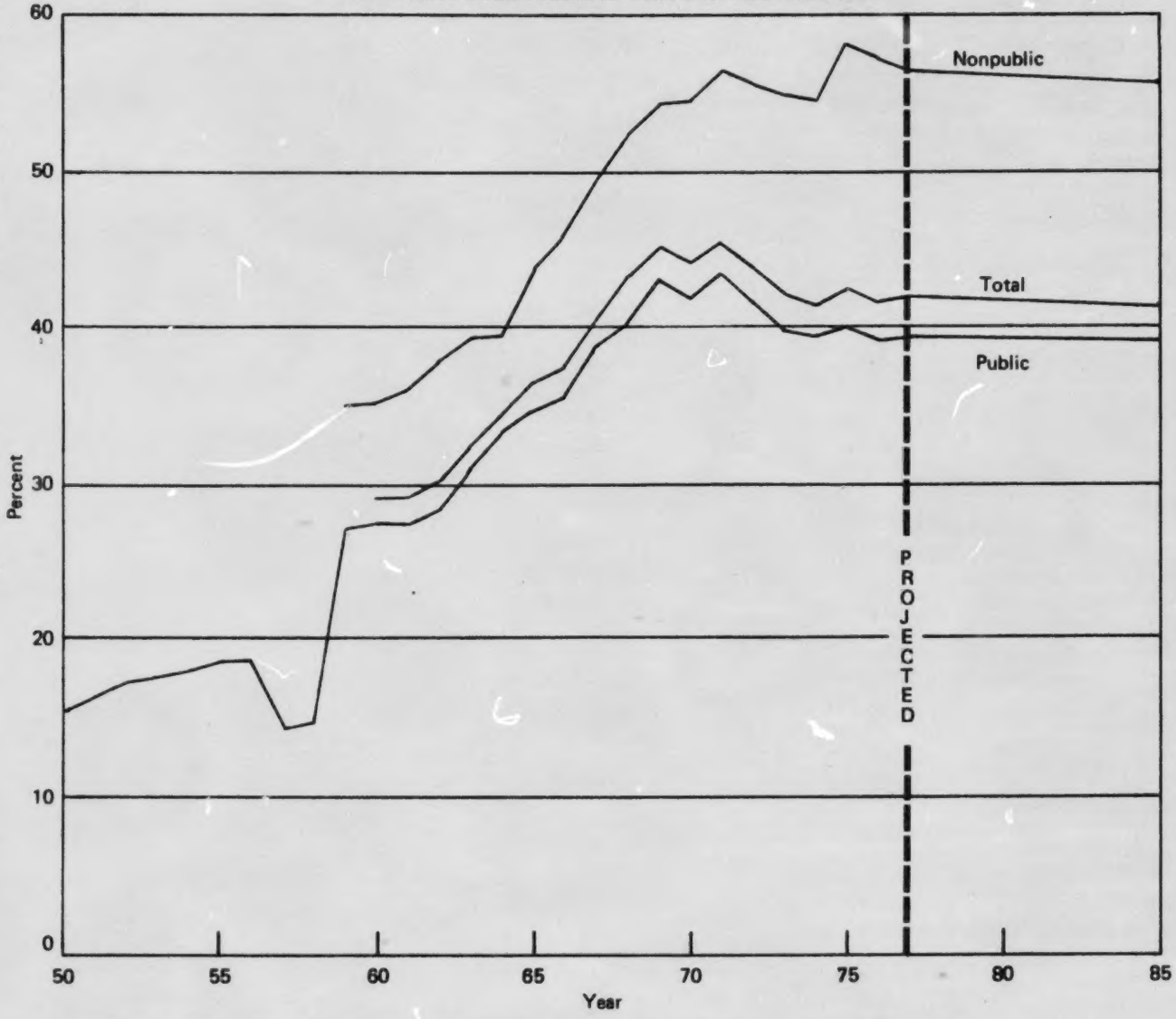
FIGURE 77
PROPORTION OF HIGH SCHOOL GRADUATES
CONTINUING FORMAL STUDIES 1950-1985



Information on graduates from nonpublic schools not available prior to 1960

Source: Based on data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 78
PROPORTION OF HIGH SCHOOL GRADUATES
ENTERING COLLEGES AND UNIVERSITIES: 1950-1985



Information on graduates from nonpublic schools not available prior to 1959

Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 43

Proportion and Number of Pennsylvania High School Graduates Going on to Higher Education Both In and Out of Pennsylvania[1]

Year	High School Graduates Entering Higher Education[2]				
	Out-of-State		In State		Total
	#	%	#	%	#
1971-72	16,871	20.4	65,868	79.6	82,739
1972-73	16,100	19.7	65,806	80.3	81,906
1973-74	14,497	18.9	62,237	81.1	76,734
1974-75	14,345	18.4	63,783	81.6	78,128
1975-76	13,795	17.1	67,065	82.9	80,860
1976-77	17,736	17.3	65,668	82.7	79,404
			Projected		
1977-78	13,345	17.0	65,153	83.0	78,498
1978-79	13,266	17.0	64,770	83.0	78,036
1979-80	13,173	17.0	64,317	83.0	77,490
1980-81	12,723	17.0	62,121	83.0	74,844
1981-82	12,524	17.0	61,144	83.0	73,668
1982-83	12,366	17.0	60,378	83.0	72,744
1983-84	11,695	17.0	57,101	83.0	68,796
1984-85	11,110	17.0	52,242	83.0	65,352
1985-86	10,660	17.0	52,046	83.0	62,706
1986-87	10,324	17.0	50,048	83.0	60,732
1987-88	11,250	17.0	54,927	83.0	66,177
1988-89	10,597	17.0	51,736	83.0	62,333
1989-90	9,750	17.0	46,625	83.0	56,175
1990-91	8,974	17.0	43,813	83.0	52,787
1991-92	8,868	17.0	43,294	83.0	52,162
1992-93	8,722	17.0	42,585	83.0	51,307
1993-94	8,665	17.0	42,307	83.0	50,972

[1]Brehman, George E. Jr. Financing Higher Education (Report No. 6): Birth, Population and Enrollment Trends and Possible Fiscal Implications for Higher Education in Pennsylvania, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education, October 1977.

[2]Includes business or technical schools granting AST or ASB degrees.

Table 44

Actual and Projected Proportions of Pennsylvania High School Graduates Going on to Higher Education Both In and Out of Pennsylvania[1]

College Year	Proportion of All High School Graduates Entering Higher Education[2]		
	Out-of-State	In-State	Total
	%	%	%
1971-72	9.2	36.1	45.3
1972-73	8.6	35.3	43.9
1973-74	8.0	34.3	42.2
1974-75	7.7	34.0	41.7
1975-76	7.3	35.3	42.6
1976-77	7.2	34.6	41.8
	Projected		
1977-78	7.1	34.9	42.0
1978-79	7.1	34.9	42.0
1979-80	7.1	34.9	42.0
1980-81	7.1	34.9	42.0
1981-82	7.1	34.9	42.0
1982-83	7.1	34.9	42.0
1983-84	7.1	34.9	42.0
1984-85	7.1	34.9	42.0
1985-86	7.1	34.9	42.0
1986-87	7.1	34.9	42.0
1987-88	7.1	34.9	42.0
1988-89	7.1	34.9	42.0
1989-90	7.1	34.9	42.0
1990-91	7.1	34.9	42.0
1991-92	7.1	34.9	42.0
1992-93	7.1	34.9	42.0
1993-94	7.1	34.9	42.0

[1]Brehman, George E. Jr. Financing Higher Education (Report No. 6): Birth, Population and Enrollment Trends and Possible Fiscal Implications for Higher Education in Pennsylvania, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education, October 1977.

[2]Includes business or technical schools granting AST or ASB degrees. Total percentages are therefore somewhat higher than shown in Figure 75 for college and university participation.

Table 44 also indicates that the proportion of all high school graduates that enter an out-of-state college or university have declined from 9.2 percent in 1971-72 to a stable 7 percent by 1976-77, with about 35 percent also going to a college or university in Pennsylvania. Increasingly high tuition and fee charges may result in an increase in this figure, however, unless the state takes more action as assumed here. Unless labor market forces and cost pressures intervene, the participation rate for high school graduates is seen as stabilizing at around 42 percent.

It is, moreover, true that changes in the proportion going on to college varies from region to region. Figure 79, for example, indicates patterns of increase or decrease in the proportion going on to a state-owned college between 1972 and 1976. Twenty-one counties experienced a decline of more than 2 percent in the proportion rate of public school graduates. Forty-seven counties in all experienced at least some decline. Only 20 experienced an increase in the participation rate.

Postsecondary Enrollments by Age and Sex

A recent effort (1974) was made to get some idea of the age and sex distribution of college students in Pennsylvania, based upon a sampling of institutions (Table 45). While the ages of college students differ widely, the majority are in the traditional age group of 18 to 22 for undergraduates and 23 to 35 for graduate students. More striking is the fact that the part-time students are older (27.2 years compared with 20.9 years), with a substantial proportion over the age of 35 (about 15 percent). In light of a probable future decline in the number of young people of the traditional college age, these older students become more significant. They reflect the probable importance of adult and continuing education in the coming years, in that they make it clear that there is some demand for higher education on the part of the adult population.

The College Entrant

What kind of aptitude does the college bound student have? This question can be answered in part by looking at the findings reported by the College Entrance Examination Board for recent years.

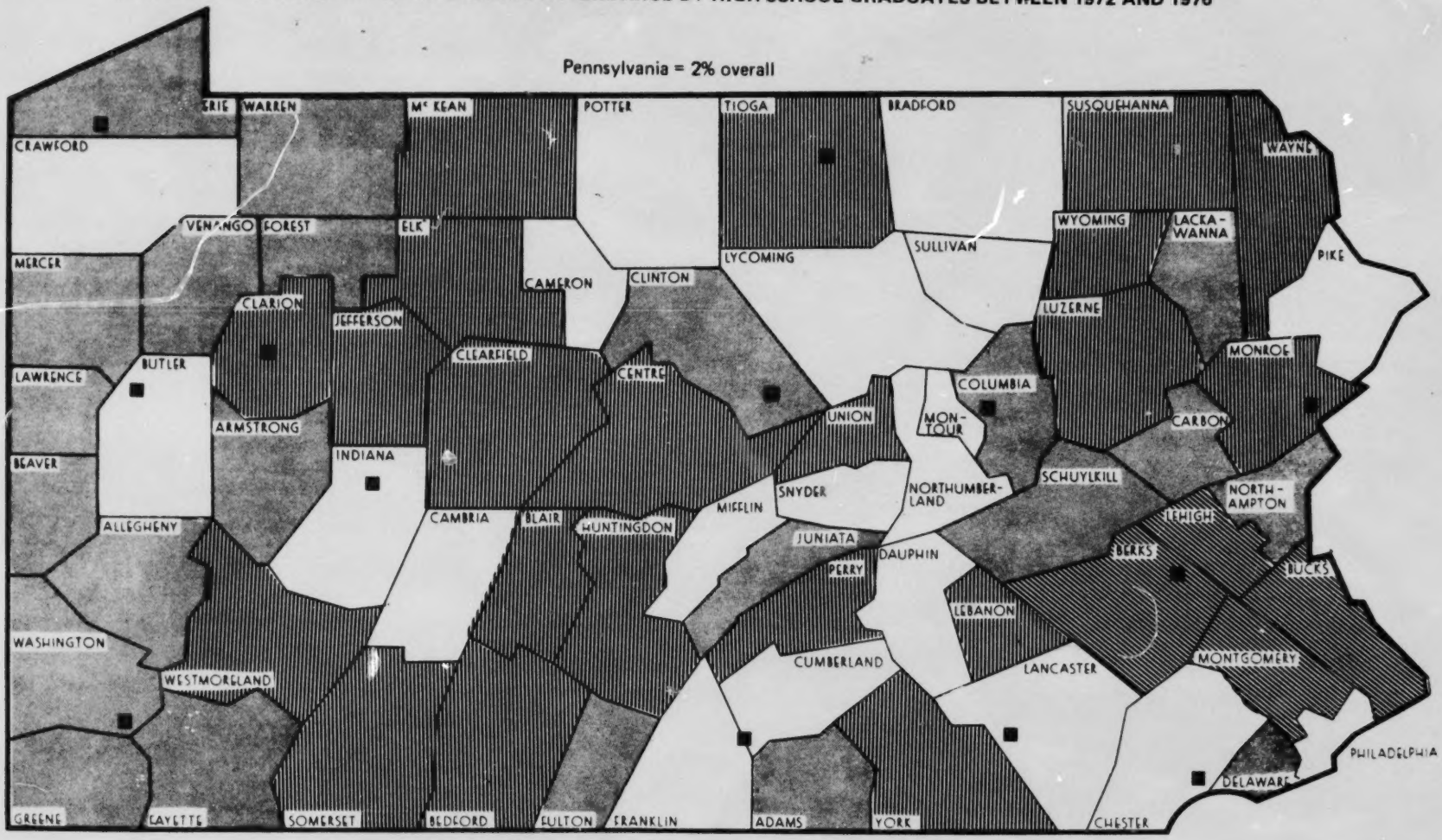
Tables 46 and 47 show the distribution of Scholastic Aptitude Test (SAT) scores for three recent years, 1971-72, 1974-75 and 1977-78. In so doing they indicate the changes that have been taking place in SAT-verbal and SAT-mathematical aptitude test mean scores and in the distribution of the scores on these two measures.

Examination of these two tables indicates that, while the SAT scores are still falling, the rate of decline slowed markedly in the three years prior to 1974-75.

Table 48 gives the average (mean) self-reported grade found for major subject areas in the years 1972-73, 1974-75 and 1977-78. The females tended to report higher high school grades than the males and, regardless of sex, or subject area, there was a tendency for the grades reported to be higher in recent years despite the reported decline of aptitude test scores as found in Tables 46 and 47. This suggests that high school grade inflation may still be occurring despite concern about this problem.

FIGURE 79

PATTERNS OF CHANGE IN PUBLIC COLLEGE ATTENDANCE BY HIGH SCHOOL GRADUATES BETWEEN 1972 AND 1976[1]



[1]Data derived from statistics provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 45

Postsecondary Institution Enrollment in 1974, Full-Time and Part-Time, Distribution by Age and Sex[1]

Age	Full-Time Men	Percent	Full-Time Women	Percent	Part-Time Men	Percent	Part-Time Women	Percent	Total	Percent
-18	5,338	4.0	6,025	5.7	1,189	3.6	1,168	3.7	13,720	4.5
18-22	109,660	82.2	89,399	83.9	10,344	31.2	10,201	32.6	219,604	72.2
23-25	9,982	8.5	5,030	4.7	6,288	19.0	5,427	17.3	26,727	8.8
26-30	5,599	4.2	2,713	2.5	7,794	23.5	5,274	16.9	21,380	7.0
31-35	1,363	1.0	1,485	1.4	3,794	11.4	3,388	10.8	10,030	3.3
36-40	650	0.5	858	0.8	1,841	5.5	2,197	7.0	5,546	1.8
41-45	297	0.2	445	0.4	873	2.6	1,536	4.9	3,151	1.0
46-50	204	0.15	333	0.3	564	1.7	1,183	3.8	2,284	0.8
51-60	152	0.1	202	0.2	357	1.1	765	2.4	1,476	0.5
60+	40	0.03	33	0.03	104	0.3	142	0.4	319	0.1
Total	133,285	43.8	106,523	35.0	33,148	10.9	31,281	10.3	304,237	100.0
Average Age	20.9		20.9		26.7		27.9			
Combined Age		20.9				27.2			22.2	

[1] Supplemental Enrollment Data of Institutions of Higher Education in Pennsylvania, Fall 1974, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1974, p. 23. (Distribution is based on a 67 percent sample, for some institutions did not report data.)

Table 46

Comparison of Scholastic Aptitude Test Verbal Score Means and Distributions for Pennsylvania College-Bound Students[1]

Score	1971-72 Number	1971-72 Percent	1974-75 Number	1974-75 Percent	1977-78 Number	1977-78 Percent	Difference in Percentage Distribution 1971-72 to 1974-75	Difference in Percentage Distribution 1974-75 to 1977-78
700-800	1,373	1.3	785	0.8	597	0.7	-2.5	-0.1
600-699	8,540	8.2	5,230	5.3	4,785	5.4	-2.9	0.1
500-599	23,571	22.7	19,241	19.5	16,775	18.8	-3.2	-0.7
400-499	35,988	34.6	35,963	36.4	31,630	33.5	1.8	-0.9
300-399	28,321	27.2	29,523	29.9	26,949	30.3	2.7	0.4
200-299	6,263	6.0	8,023	8.1	8,311	9.3	2.1	1.2
Mean Score	448		430		427			

220

[1] Derived from Pennsylvania College Bound Seniors, 1971-72, 1974-75 and 1977-78, Admissions Testing Program of the College Entrance Examination Board, Princeton, New Jersey, 1972, 1975 and 1978.

Table 47

Comparison of Scholastic Aptitude Test Mathematics Score and Distributions for Pennsylvania College-Bound Students[1]

Score	1971-72 Number	1971-72 Percent	1974-75 Number	1974-75 Percent	1977-78 Number	1977-78 Percent	Difference in Percentage Distribution 1971-72 to 1974-75	Difference in Percentage Distribution 1974-75 to 1977-78
700-800	2,877	2.8	2,444	2.5	2,205	2.5	-0.3	0.0
600-699	12,876	12.4	10,897	11.0	9,994	11.2	-1.4	0.2
500-599	29,093	28.0	26,097	26.4	22,730	25.5	-1.6	-0.9
400-499	34,398	33.0	32,108	32.5	28,515	32.0	-0.5	-0.5
300-399	20,888	20.0	22,919	23.2	21,210	23.8	+3.2	+0.6
200-299	3,917	3.8	4,294	4.4	4,390	5.0	+0.6	+0.6
Mean Score	478		470		467			

[1]Derived from Pennsylvania College-Bound Seniors, 1971-72, 1974-75 and 1977-78, Admissions Testing Program of the College Testing Program of the College Entrance Examination Board, Princeton, New Jersey, 1972, 1975 and 1978.

Table 48

Mean Self-Reported High School Grades by Subject and Sex for Pennsylvania College-Bound Students, 1972-73, 1974-75, 1977-78[1]

Subject[2]	1972-73 Male	1972-73 Female	1974-75 Male	1974-75 Female	1977-78 Male	1977-78 Female	Mean Grade Difference 1972-73 to 1974-75 Male	Mean Grade Difference 1972-73 to 1974-75 Female	Mean Grade Difference 1974-75 to 1977-78 Male	Mean Grade Difference 1974-75 to 1977-78 Female
English	2.93[3]	3.28	2.99	3.33	3.01	3.30	0.06	0.05	0.08	0.03
Mathematics	2.76	2.84	2.81	2.86	2.87	2.90	0.05	0.02	0.11	0.04
Foreign Language	2.66	3.12	2.68	3.13	2.80	3.18	0.02	0.01	0.14	0.05
Biological Science	2.93	3.08	2.96	3.08	3.01	3.13	0.03	0.00	0.08	0.05
Physical Science	2.75	2.83	2.92	2.94	2.91	2.94	0.17	0.11	0.16	0.11
Social Studies	3.09	3.23	3.17	3.28	3.21	3.29	0.08	0.05	0.12	0.06

[1]Pennsylvania College-Bound Seniors, 1972-73, 1974-75 and 1977-78, Admissions Testing Program of the College Entrance Examination Board, Princeton, New Jersey, 1973, 1975 and 1978.

[2]The number of students reporting varies from 35,904 to 42,773 depending upon the subject, sex of the respondent and year.

[3]An average mean of reported grades using the following scale: A = 4, B = 3, C = 2, D = 1 and F = 0.

Table 49 gives a picture of the ethnic distribution of college bound students and suggests that college-bound minority respondents are increasing both numerically and percentage-wise, i.e., from 6,281 to 7,046 and from 7.5 percent to 8.8 percent. Black, Puerto Rican and, particularly, oriental respondents showed the most growth.

Intended Area of Study

Table 50 gives a picture, by sex, of how the choice of a preferred area of study may have changed between 1974-75 and 1977-78 and also gives the percentage distribution of choices for the selected major areas of intended study. Figure 80 shows the percentage and absolute value for these same intended areas of study and, in addition, shows the average verbal and mathematical attitude scores (SAT score) for these areas. As might be expected, the would-be engineer tends to have a high SAT-math score and also a relatively high SAT-verbal score, while the would-be education or art major tends to have the lowest average scores of the groups shown.

Figure 81 delineates the intended first choice field of study of each sex in two different years. Of particular interest here is the marked decline of education as the first choice of the female and the strong increase, for both sexes, of interest in engineering, particularly in the case of the women. Health and medical areas are still the most likely choices, despite the difficulties of admission into professional schools and current fears of surpluses in some of these professions.

Table 51 attempts a more detailed break down of some of these fields of study and indicates the numerical and percentage changes that have taken place in these speciality areas between the years 1974-75 and 1977-78. For example, radiology, X-ray, business and commerce and aerospace and aeronautical engineering have grown markedly as first choice areas of study, while political science and elementary education have markedly or noticeably declined as first choice selections.

Student Tuition and Fees

The decision of whether or not to go on to an institution of higher education is, to a large extent, basically a function of four considerations: (1) desire and/or aptitude for advanced study, (2) perceived need for graduates in a field of interest, (3) adequate return for the monies invested and (4) ability to meet the costs involved.

Figures 82, 83 and 84 indicate, for example, that a Pennsylvanian faces higher tuition fees and related charges than do residents of other states. Figure 82 reflects the degree to which tuition charges are higher at Pennsylvania's state colleges. Figure 83 does the same with regard to The Pennsylvania State University and Figure 84 indicates that this is true even with regard to community colleges, colleges which are known to particularly serve students with a lower socioeconomic status. These findings must be considered in light of the fact that Pennsylvania also offsets these expenses to some degree by loan assistance by the Pennsylvania Higher Education Assistance Agency (PHEAA).

Much attention has been given to the recent increase in tuition and fees, but in Figures 85 through 88 we find that, in real dollar terms, the cost of tuition and fees has not actually risen markedly and may even have declined. The only exception is found in Figure 88, where the real private state-aided college dollar cost for tuition and fees is seen as rising substantially between 1967-68 and 1974-75 and then leveling off to some degree. Apparently most of the increases in tuition have not

Table 49

Ethnic Background of Students Taking Scholastic Aptitude Tests, Pennsylvania, 1974-75 and 1977-78[a]

	1974-75		1977-78		Percent Difference 1974-75 - 1977-78
	Number	Percent	Number	Percent	
American Indian	131	0.2	191	0.2	0.0
Black	4,869	5.8	5,274	6.6	0.8
Mexican American	71	0.1	67	0.1	0.0
Oriental	264	0.3	555	0.7	0.4
Puerto Rican	266	0.3	277	0.3	0.0
White	77,885	92.5	72,998	91.2	-1.3
Other	680	0.8	682	0.9	0.1
Number Responding	84,166	100.0	80,044	100.0	
Minority Students	6,281	7.5	7,046	8.8	1.3

[a]Pennsylvania College-Bound Seniors, 1974-75 and 1978, Admissions Testing Program of the College Entrance Examination Board, Princeton, New Jersey, 1975 and 1978.

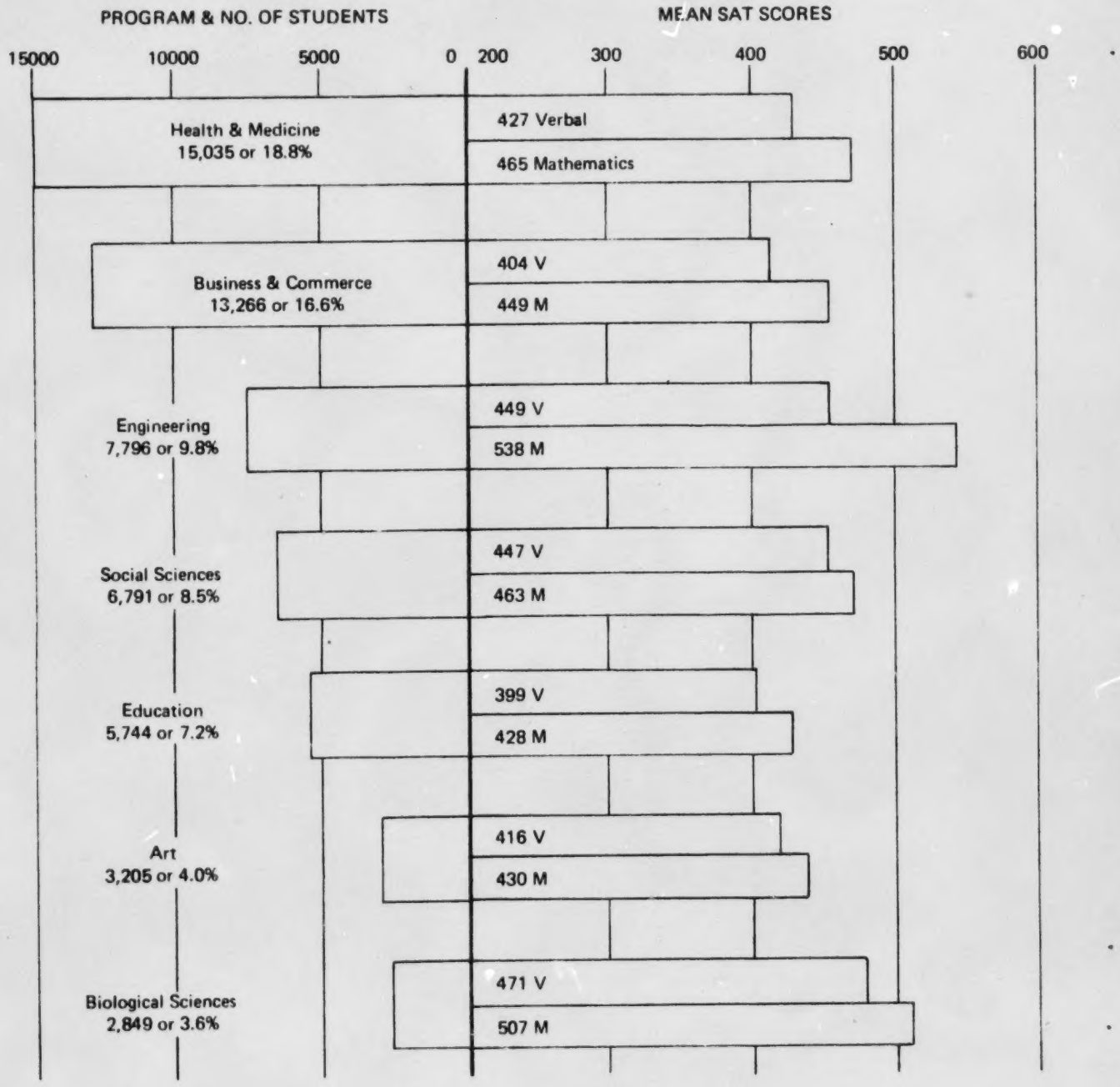
Table 50

Intended Areas of Study by Pennsylvania-Bound Students, 1974-75 and 1977-78[a]

Intended Area of Study	Percentage 1974-75			Percentage 1977-78			Percentage Change 1974-75 to 1977-78
	40,732 Males	42,634 Females	83,336 Total	79,859 Total	38,108 Males	41,751 Females	
Health and Medicine	6.1	25.1	15.9	18.8	9.3	27.5	+2.9
Business and Commerce	14.2	8.8	11.4	16.6	18.7	14.7	+5.2
Engineering	12.7	1.1	6.8	9.8	18.3	2.0	+3.0
Social Sciences	8.4	7.4	7.9	8.5	8.6	8.5	+0.6
Education	4.5	15.1	9.9	7.2	3.7	10.4	-2.7
Art	2.1	5.0	3.6	4.0	2.3	5.6	+0.4
Biological Sciences	9.6	6.4	8.0	3.6	3.9	3.2	-4.4
Total	57.6	68.9	63.5	68.5	64.8	71.9	+5.0

[a]Pennsylvania College-Bound Seniors, 1974-75 and 1978, Admissions Testing Program of the College Entrance Examination Board, Princeton, New Jersey, 1975 and 1978.

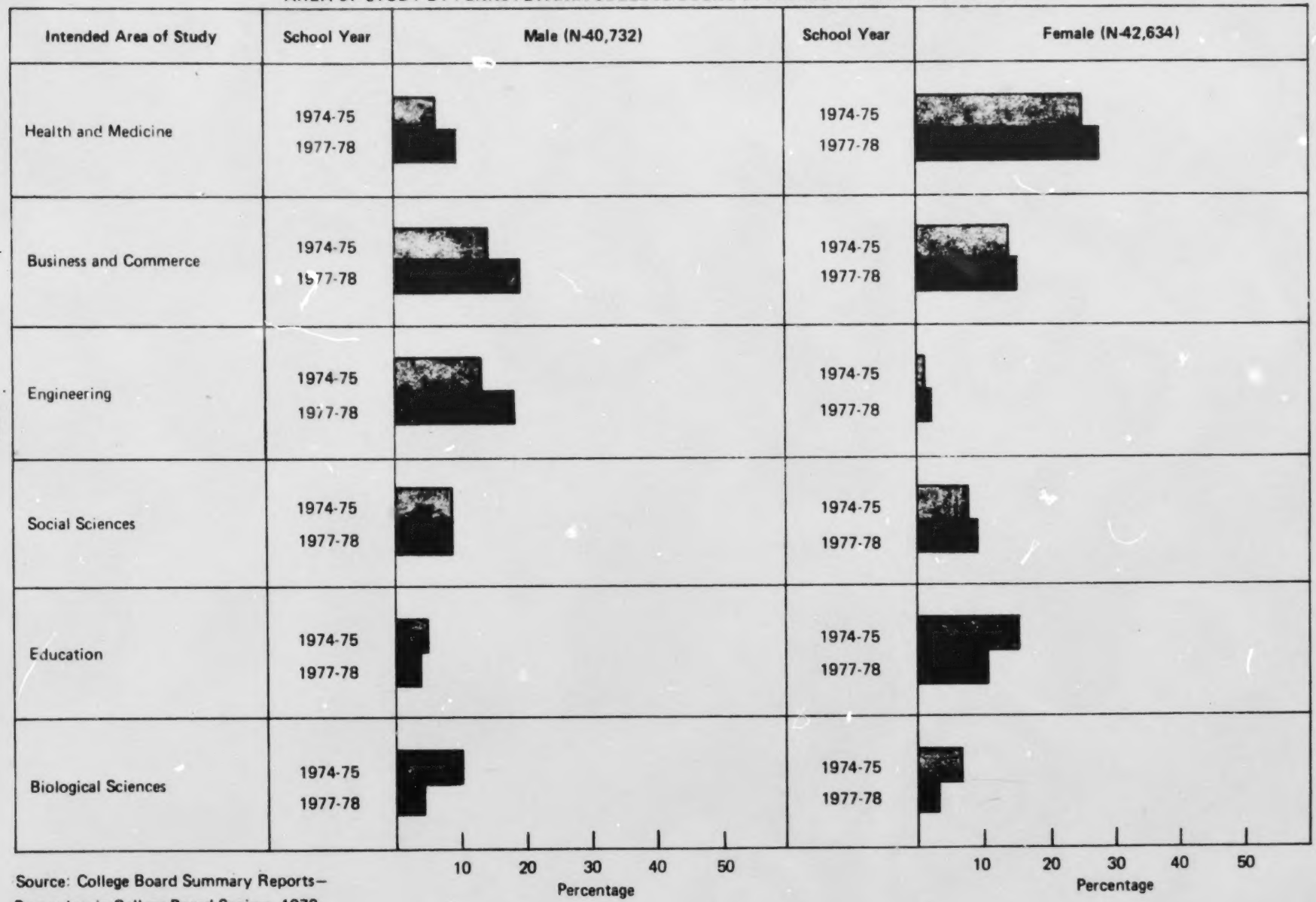
FIGURE 80
FIRST CHOICE INTENDED AREAS OF STUDY AND SAT MEANS SCORES IN SELECTED FIELDS, PENNSYLVANIA COLLEGE-BOUND STUDENTS, 1977-78



Source: College Board Summary Reports—Pennsylvania College Board Seniors, 1978

FIGURE 81

SELECTED COMPARISONS BY SEX OF THE PERCENTAGE OF FIRST CHOICES OF INTENDED AREA OF STUDY BY PENNSYLVANIA COLLEGE-BOUND STUDENTS IN 1974-75 AND 1977-78



Source: College Board Summary Reports—Pennsylvania College Board Seniors, 1978

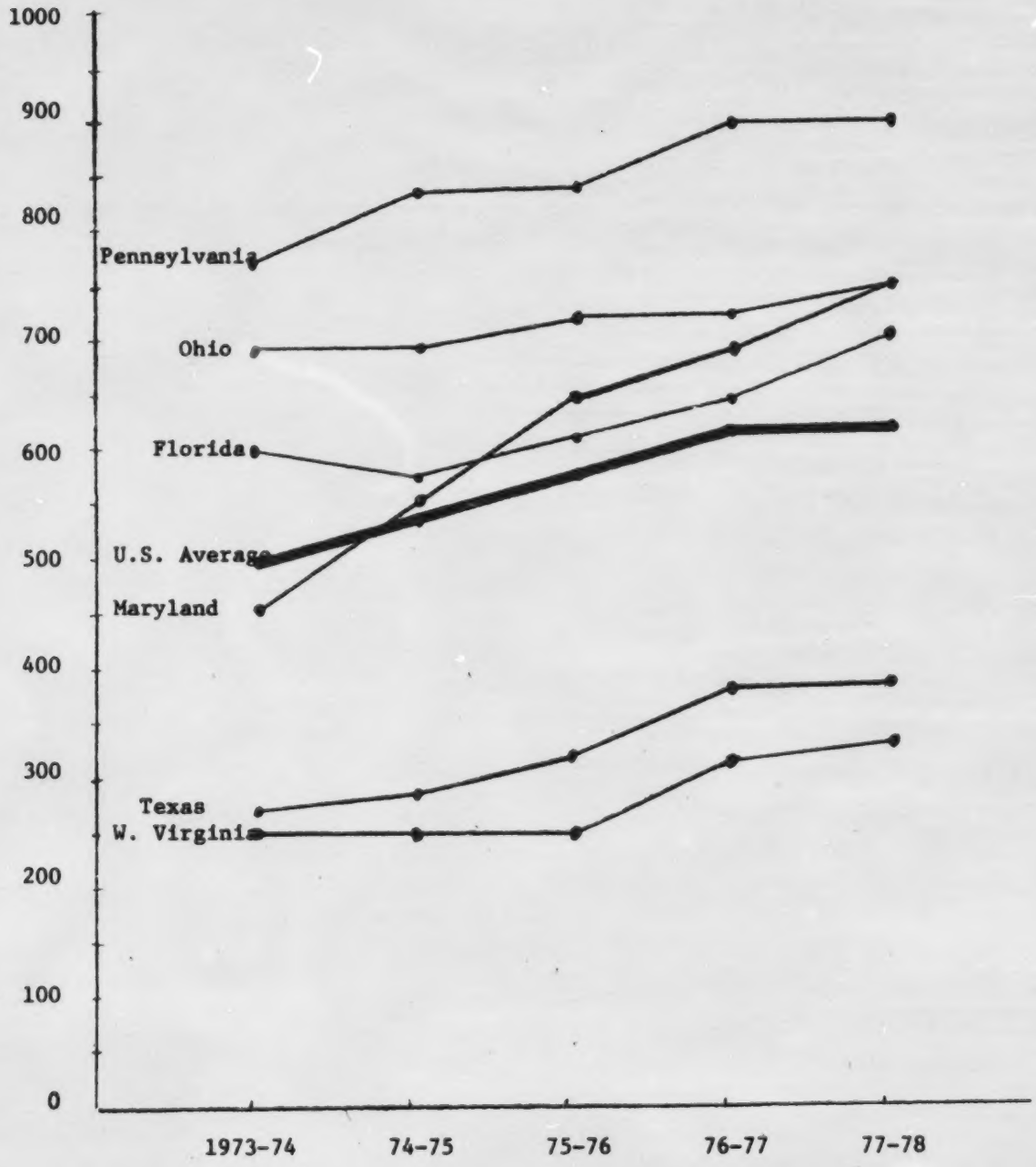
Table 51

Intended Specific Fields of Study (Selected--First Choice, College-Bound Students in Pennsylvania, 1974-75 and 1977-78)[a]

	1974-75	1977-78	Change 1974-75 to 1977-78	
	#	#	#	%
Health and Medicine				
Nursing, Registered	2,376	4,310	1,934	81.3
Premedicine	1,643	2,382	739	45.0
Medical Technology	567	777	210	37.0
Pharmacy	368	621	253	68.8
Preveterinary	Not Reported	787	--	--
Radiology/X-Ray	227	570	343	151.1
Predentistry	269	494	225	83.6
Dental Hygiene	304	488	183	60.0
Business and Commerce				
Business Management and Administration	1,646	4,008	2,362	143.5
Secretarial Studies	568	1,407	839	147.7
Accounting	1,850	3,721	1,871	101.1
Sales and Retailing	172	450	278	161.6
Engineering				
Electrical Engineer	791	1,620	829	104.8
Mechanical Engineer	393	836	443	112.7
Aerospace/Aeron	267	683	416	155.8
Chemical Engineer	279	571	292	104.7
Civil Engineer	380	568	188	49.5
Social Sciences				
Prelaw/Law	Not Reported	2,210	--	--
Law Enforcement	650	1,310	660	101.5
Social Work	613	972	359	58.6
Political Science	854	496	-358	-41.9
Sociology	250	277	27	10.8
Education				
Physical Education	944	1,196	252	26.7
Elementary Education	1,022	945	- 77	- 7.5
Child Development	359	540	181	50.4
Education of Mentally Retarded	511	508	- 3	- 0.6
Art				
Commercial Art	322	664	342	106.2
Biological Sciences				
Biology	580	806	226	39.0
Marine Biology	287	571	284	99.0

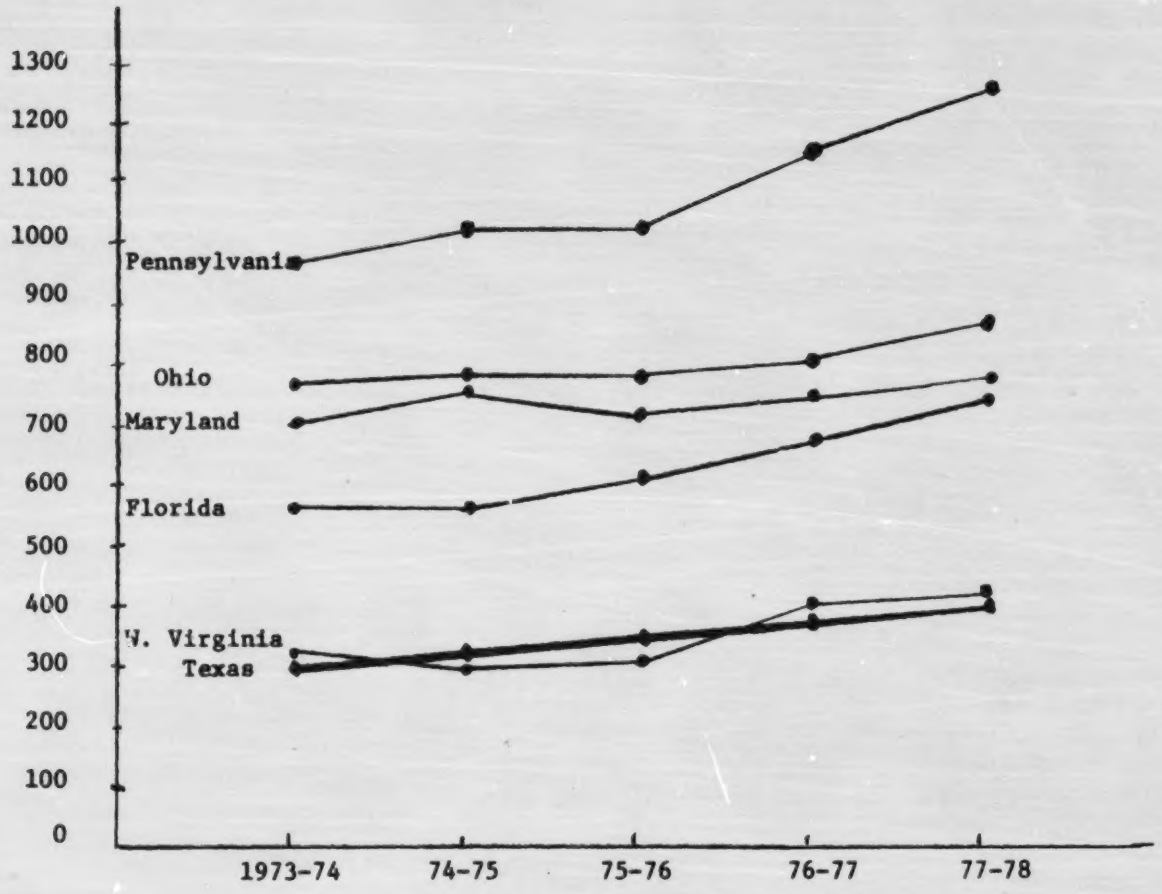
[a]Vocational Education Management Information Systems, Pennsylvania Department of Education, 1978.

FIGURE 82
MEDIAN TUITION RATES FOR SELECTED STATE COLLEGES*



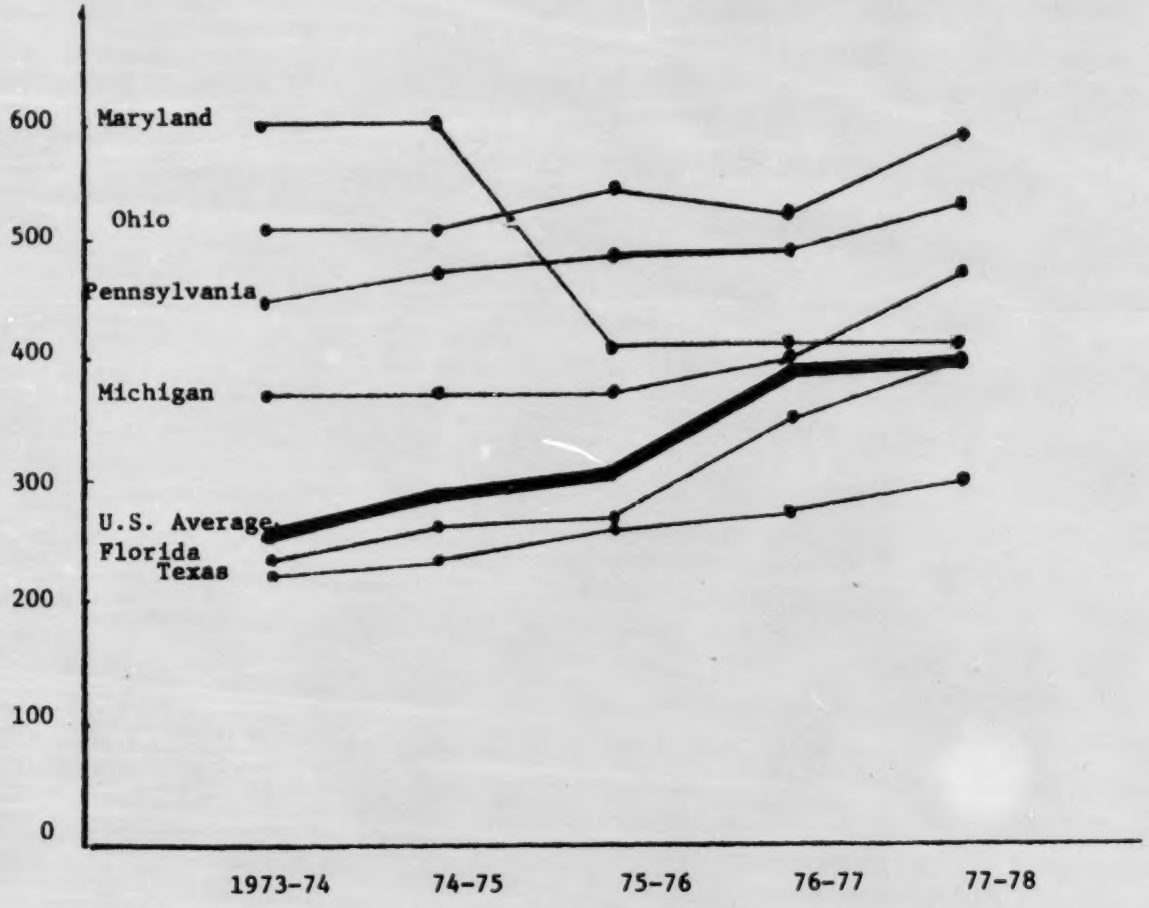
*Estimated from *The Chronicle of Higher Education*, "A Fact File of Tuition & Fees," March 1974, 1975, 1977.

FIGURE 83
MEDIAN TUITION RATES FOR SELECTED STATE UNIVERSITIES*



*Estimated from *The Chronicle of Higher Education*, "A Fact File of Tuition & Fees," March 1974, 1975, 1977.

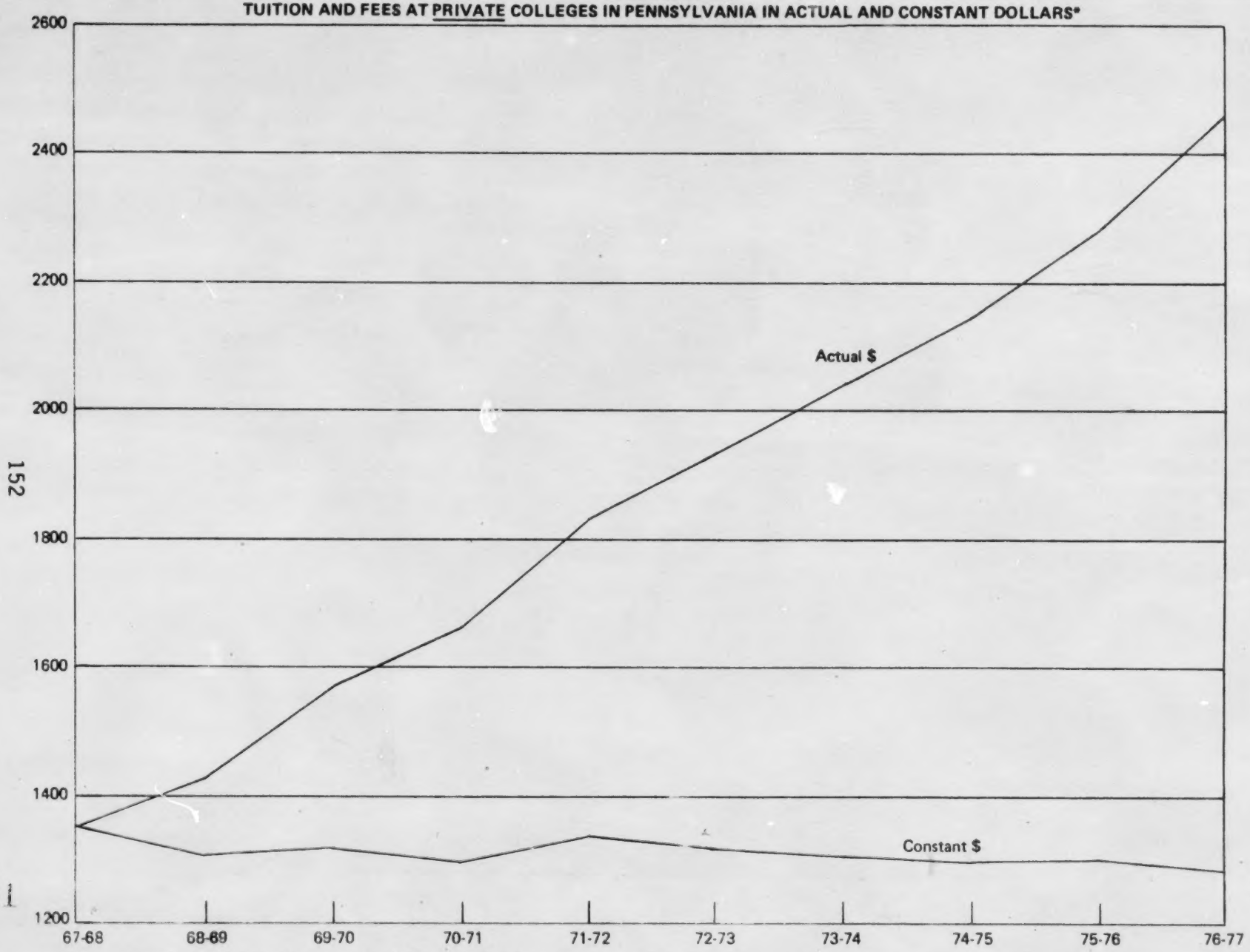
FIGURE 84
MEDIAN TUITION RATES FOR SELECTED COMMUNITY COLLEGES*



*Estimated from *The Chronicle of Higher Education,* "A Fact File of Tuition & Fees," March 1974, 1975, 1977.

FIGURE 85

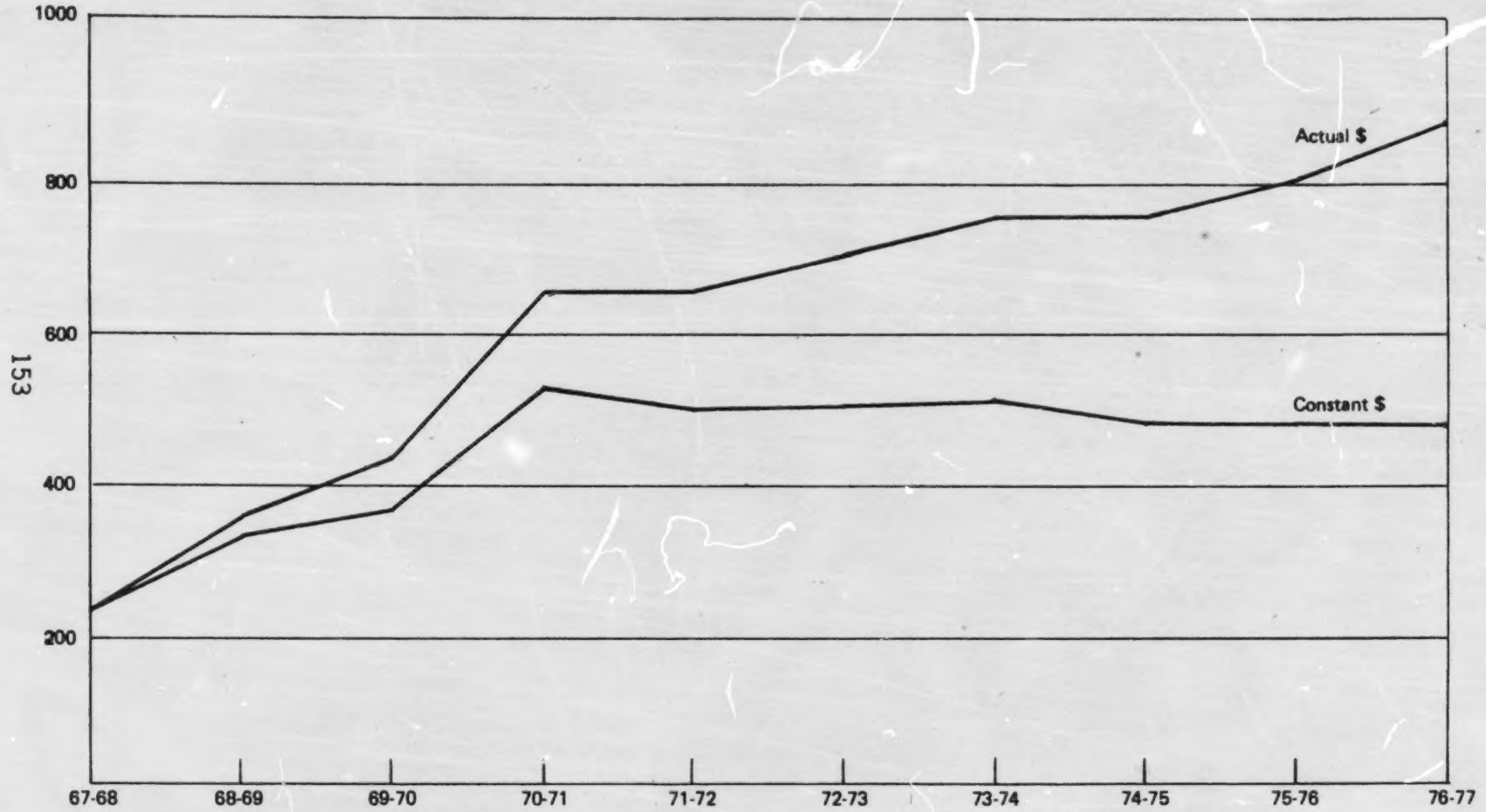
TUITION AND FEES AT PRIVATE COLLEGES IN PENNSYLVANIA IN ACTUAL AND CONSTANT DOLLARS*



*Deflated by Tuition Price Index in D. Kent. Halstead, *Higher Education Prices and Price Indexes.*

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 86
TUITION AND FEES FOR THE STATE COLLEGES AND UNIVERSITY IN ACTUAL AND CONSTANT DOLLARS*

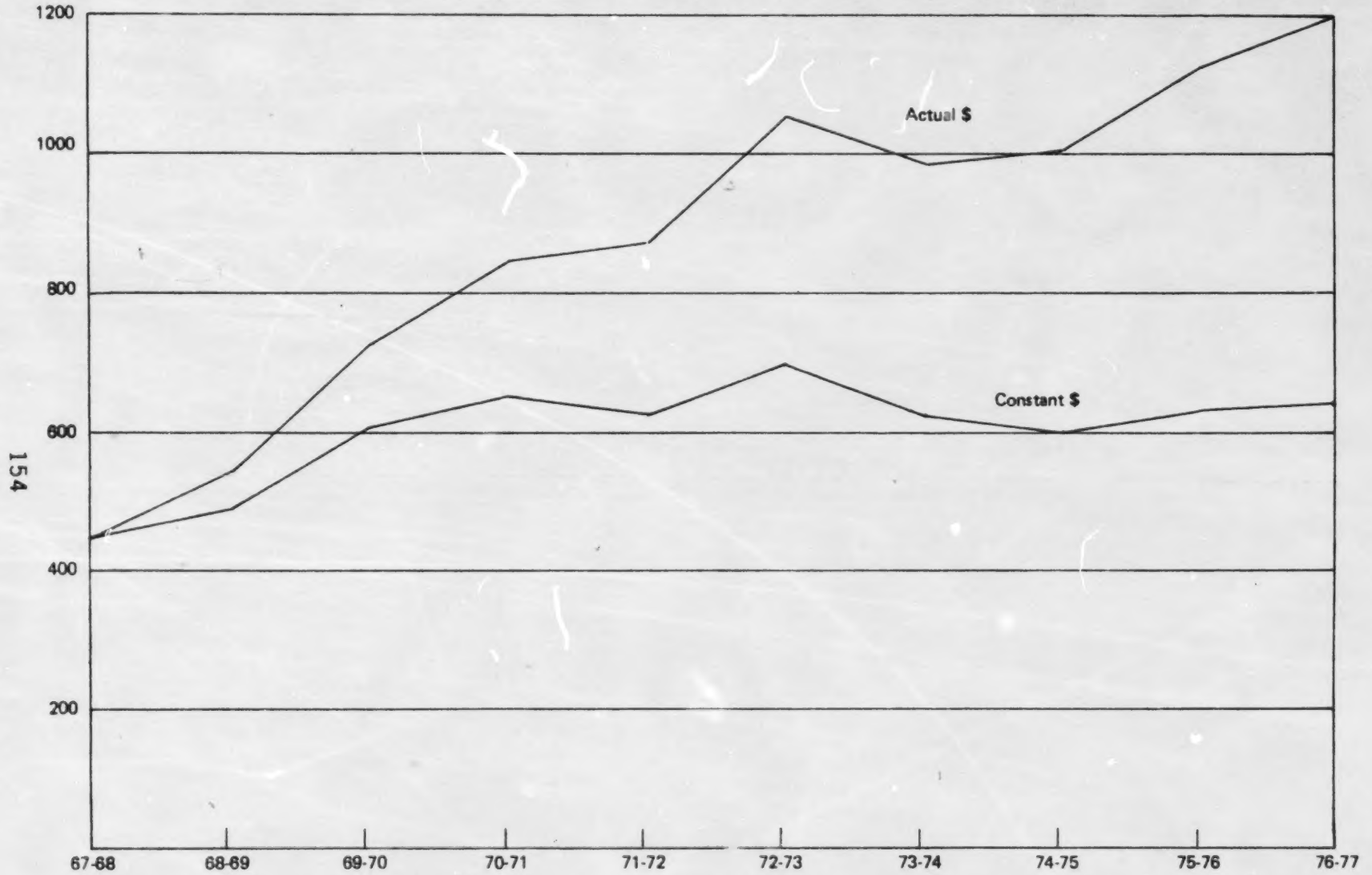


*Deflated by Tuition Price Index in D. Kent Halstead, *Higher Education Prices and Price Indexes.*

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 87

TUITION AND FEES IN THE STATE-RELATED UNIVERSITIES IN PENNSYLVANIA IN ACTUAL AND CONSTANT DOLLARS*

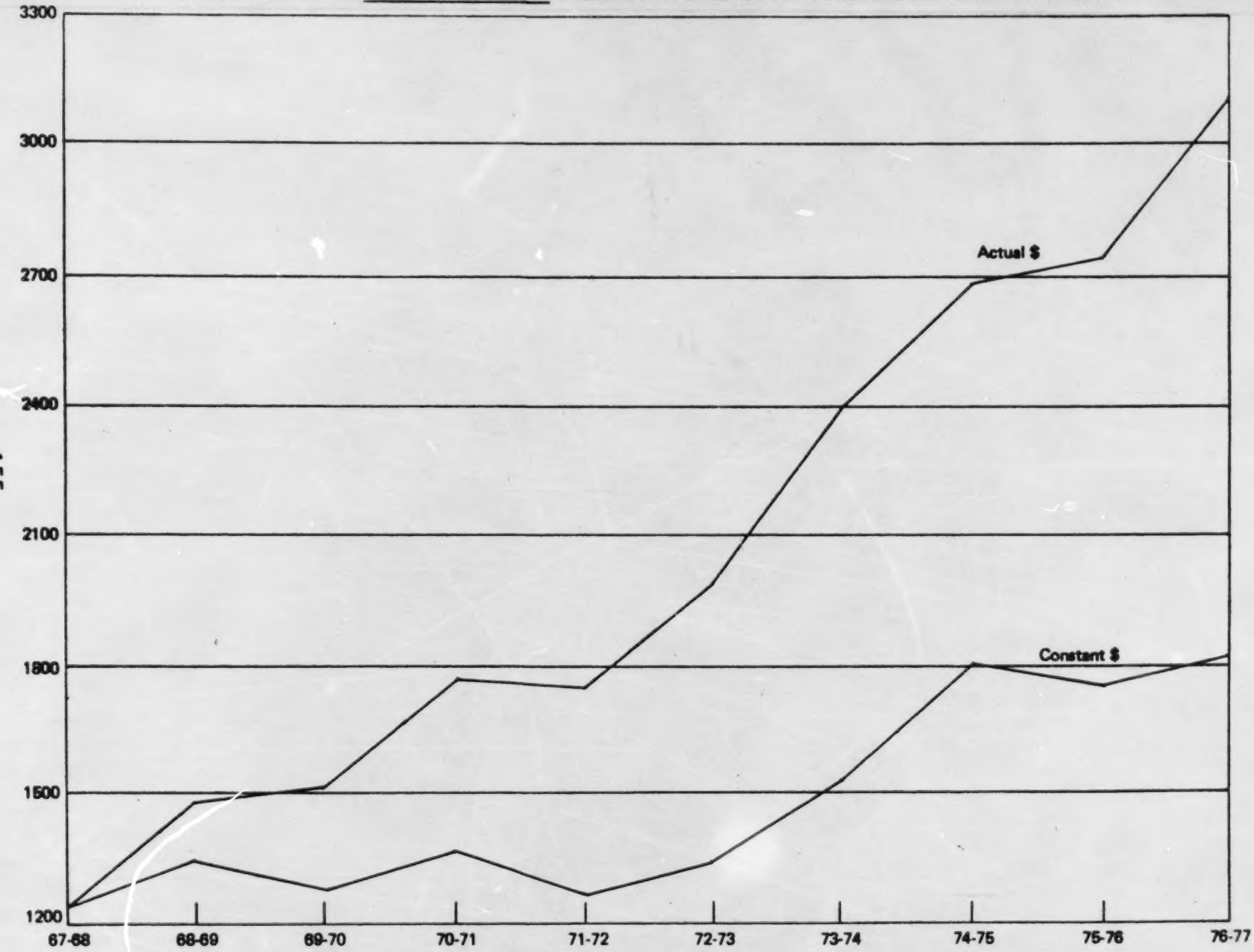


*Deflated by Tuition Price Index in D. Kent Halstead, *Higher Education Prices and Price Indexes.*

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 88

TUITION AND FEES AT PRIVATE STATE-AIDED COLLEGES IN PENNSYLVANIA IN ACTUAL AND CONSTANT DOLLARS*



*Deflated by Tuition Price Index in D. Kent Halstead, *Higher Education Prices and Price Indexes*

Source: John Kehoe, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

really been increases in terms of actual costs but rather reflect closely the effect of inflation. This suggests that tuition may not yet be a major barrier to college education to the extent that colleges such as the private colleges have been making an effort to hold student costs down in terms of actual non-inflated dollar costs. Erosion of family income by inflation is more likely to play the major negative role here.

The real dollar increase in tuition and fees that has occurred raises a question of to what degree has this actually caused a hardship for various segments of our population. Table 52 gives the median national and Pennsylvania family incomes of students of various ethnic and racial backgrounds. Table 52 also indicates the median estimated contribution that can be made by families in each group when the number of dependents, etc., is taken into account. The percentage the median estimated contribution is of the median income for an ethnic group is also shown. As might be expected, the white student's parents have the highest income and are generally able to contribute a larger percentage of that income toward tuition and fees and other costs, while parents in the other groups tend to have lower family incomes and are thus able to provide a relatively smaller proportion of their incomes for tuition and fees. The amounts shown are obviously small when compared with actual dollar student costs per year for higher education. This points up the importance of loan assistance such as is provided by PHEAA.

Table 52

Estimated Median Contribution Capability and Median Family Income by Ethnic Grouping in 1977-78 for College-Bound Seniors in Pennsylvania and Nationally[1]

Ethnic Group	Median Income		Median Contribution[2] (Estimated)		Contribution Percent of Income	
	U.S.	PA	U.S.	PA.	U.S.	PA
					%	%
American Indian	$15,000	$13,000	$ 560	520	3.7	4.0
Black	9,500	9,600	380	390	4.0	4.1
Mexican-American	12,200	16,100	430	570	3.5	3.5
Oriental	16,200	14,700	630	540	3.9	3.7
Puerto Rican	9,500	8,300	390	360	4.1	4.3
White	20,500	17,800	1,410	950	6.9	5.3
Other	14,500	15,500	540	580	3.7	3.7
No Response	17,700	16,100	870	680	4.9	4.2
All Students	19,200	17,200	1,140	860	5.9	5.0

[1]Data taken or derived from College-Bound Seniors, 1978 (Pennsylvania and National Issues) published by the Admissions Testing Program of the College Entrance Examination Board.

[2]Median contributions are based upon estimated parental contributions, taking into consideration the number of reported dependents, the number of dependents in college and approximate family income before taxes, while taking into account the effects of inflation.

The Economic Returns of Higher Education

A great deal of publicity has recently been given to the difficulty college graduates are having in finding jobs, and there is no doubt that they are having more difficulty than in the past. Some are being forced to accept positions that have not been traditionally held by college graduates, and a substantial proportion are not finding employment in a field that is directly related to their field of preparation. It is, nevertheless, true that the college graduate still has an employment rate that is substantially better than that of the noncollege graduate.

For example, Figure 89 shows unemployment rates for 18- to 24-year olds and for 25-to 34-year olds broken down by the number of years of schooling. It is clearly evident that, nationally, the college graduate has had a lower rate of unemployment than those with less education, regardless of the job market and that, in fact, the college graduate has, in recent years, improved his or her position in this regard compared with 1973.

Figure 90, in contrast, looks at the expected lifetime income of males when broken down by years of schooling. Here again we find that those with more schooling, particularly college graduates with 16 or more years of schooling, receive higher lifetime incomes than those with less. The expected incomes are given as they were computed at different points in time but are in terms of uninflated 1972 dollars.

It has been said, however, that the student return (earnings) for a college education relative to the earnings of high school graduates of the same period has been dropping. Figure 91 shows earnings of high school graduates as a proportion of the earnings of college graduates between 1969 and 1975. The earnings of high school graduates are seen as increasing relative to those of college graduates through 1974 and then going down again. There is then some basis for the above assertion of a drop in returns to the college student.

As noted earlier in Figure 89, the years 1973 and 1974 represent the low point in unemployment with a high demand for workers at all levels. Findings in Figure 91 may then be seen as reflecting a basic fact, i.e., when jobs are generally scarce the college graduate fares better than the general population with regard to earnings and has less unemployment on a percentage basis.

The coming years, however, are seen by the federal government as not bright for the college graduate, with the exception of certain fields such as engineering. In fact, the Federal Bureau of Labor Statistics anticipates that only about 15 percent of all jobs in the 1980s will be for positions traditionally held by college graduates.[1] If true, this suggests the possibility of a decline in the proportion of young people going to college, i.e., a lower participation rate. This issue will be discussed later in connection with projections of future college enrollment.

Postsecondary Enrollment

Figure 92 indicates growth in full-time and part-time enrollments for each sex between 1951 and 1977. Of particular interest here is the cross-over of part-time men and part-time women with the number of part-time female students now exceeding the males. Also noteworthy is the dramatic and continuing rise in the number of female students in contrast to the slight decline in male enrollments. This change in the proportion of female versus male students is also found in Figure 93 for the years 1968-1977.

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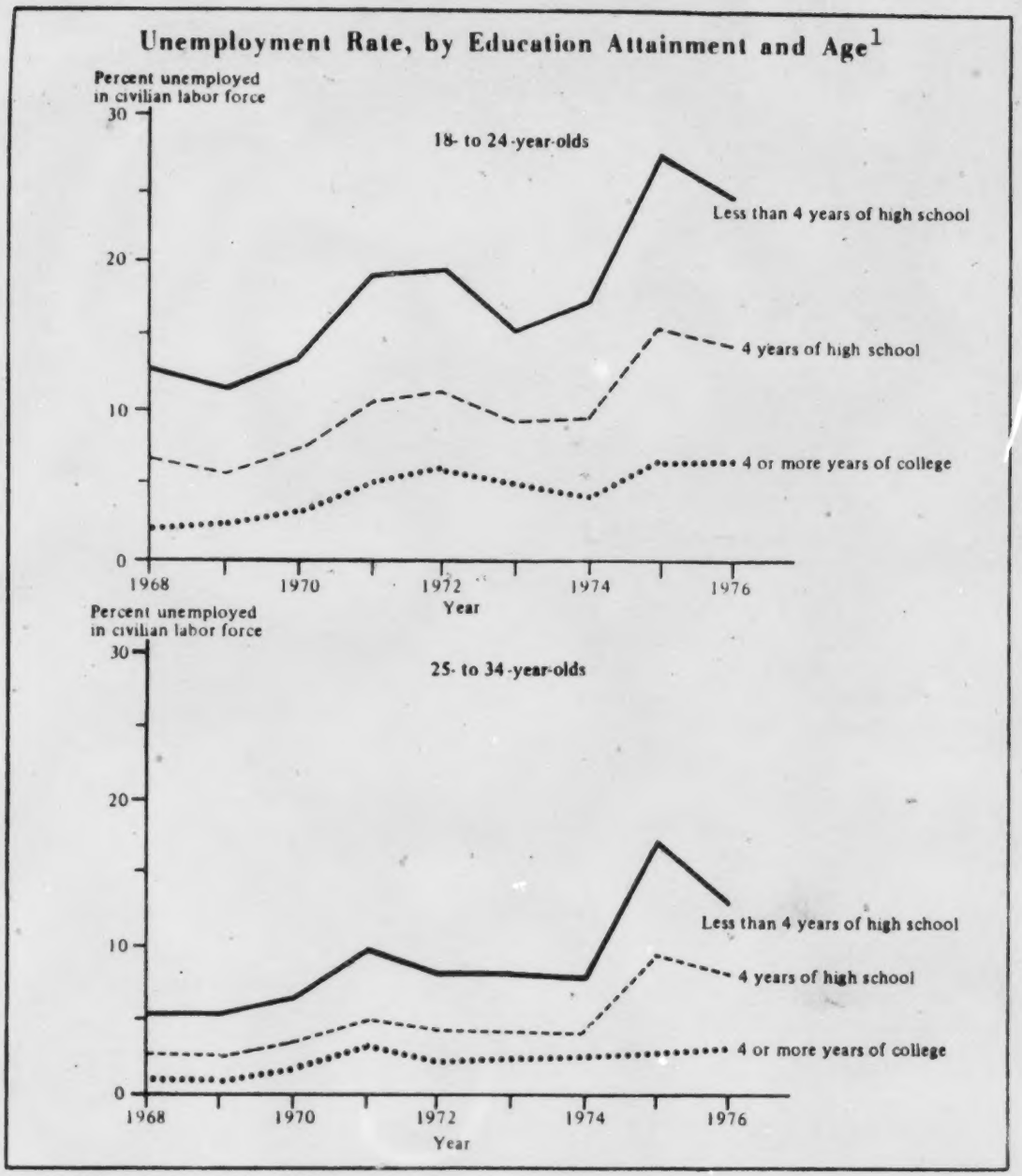
[1] Occupational Outlook Handbook 1978, U.S. Bureau of Labor Statistics.

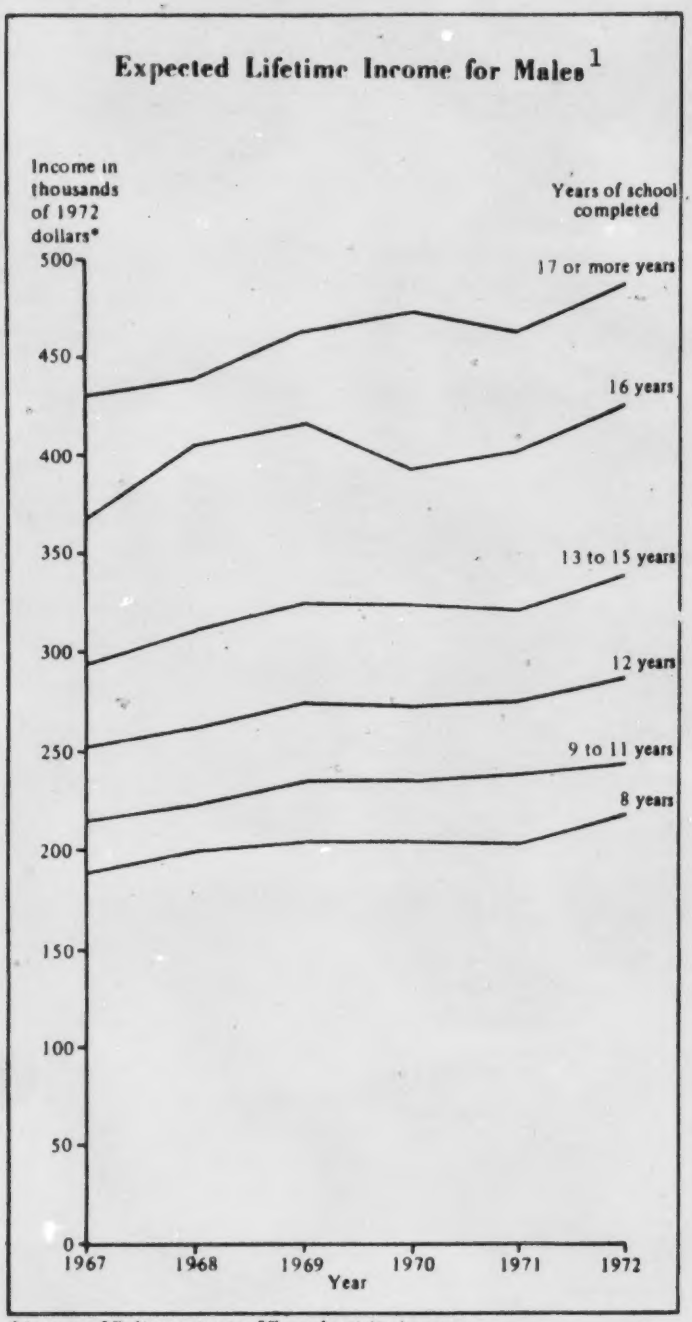
FIGURE 89



Source of Data: Bureau of Labor Statistics

[1]Golladay, Mary A. *The Conditions of Education: 1977 Edition,* Vol. 3, Part One, National Center for Education Statistics, 1977.

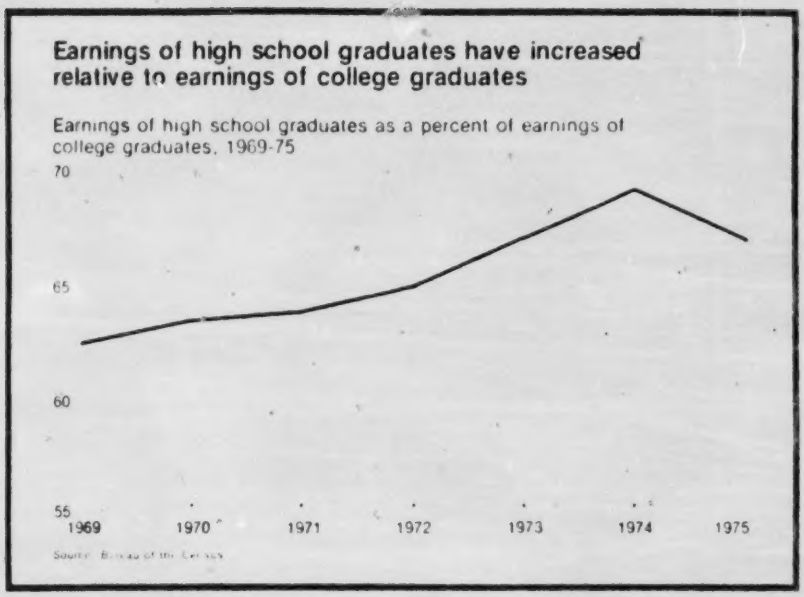
FIGURE 90



*Assumes 5% discount rate, 3% productivity increase
Source of Data: Bureau of the Census

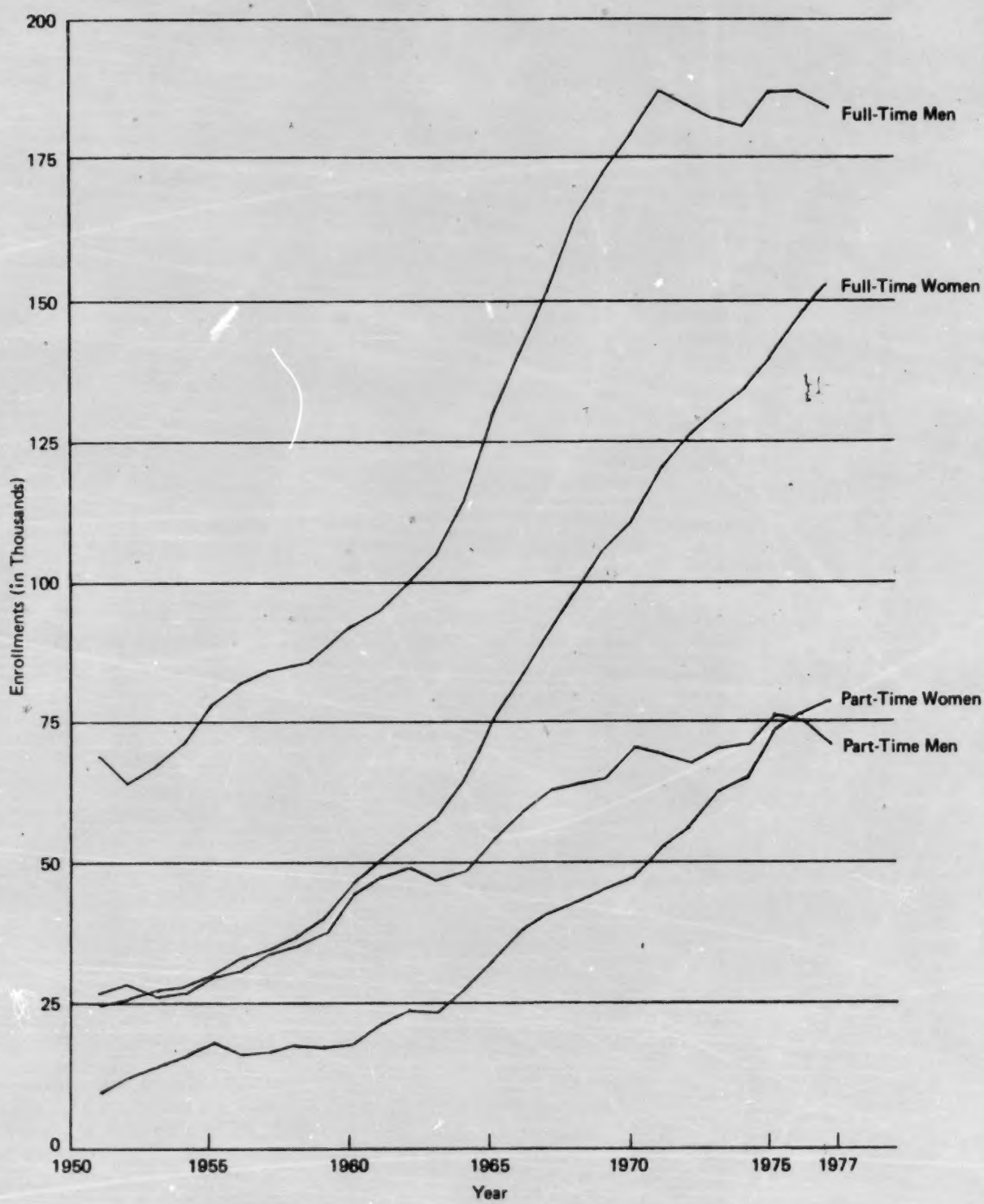
[1]Golladay, Mary A. *The Conditions of Education: 1977 Edition*, Vol. 3, Part One, National Center for Education Statistics, 1977.

FIGURE 91



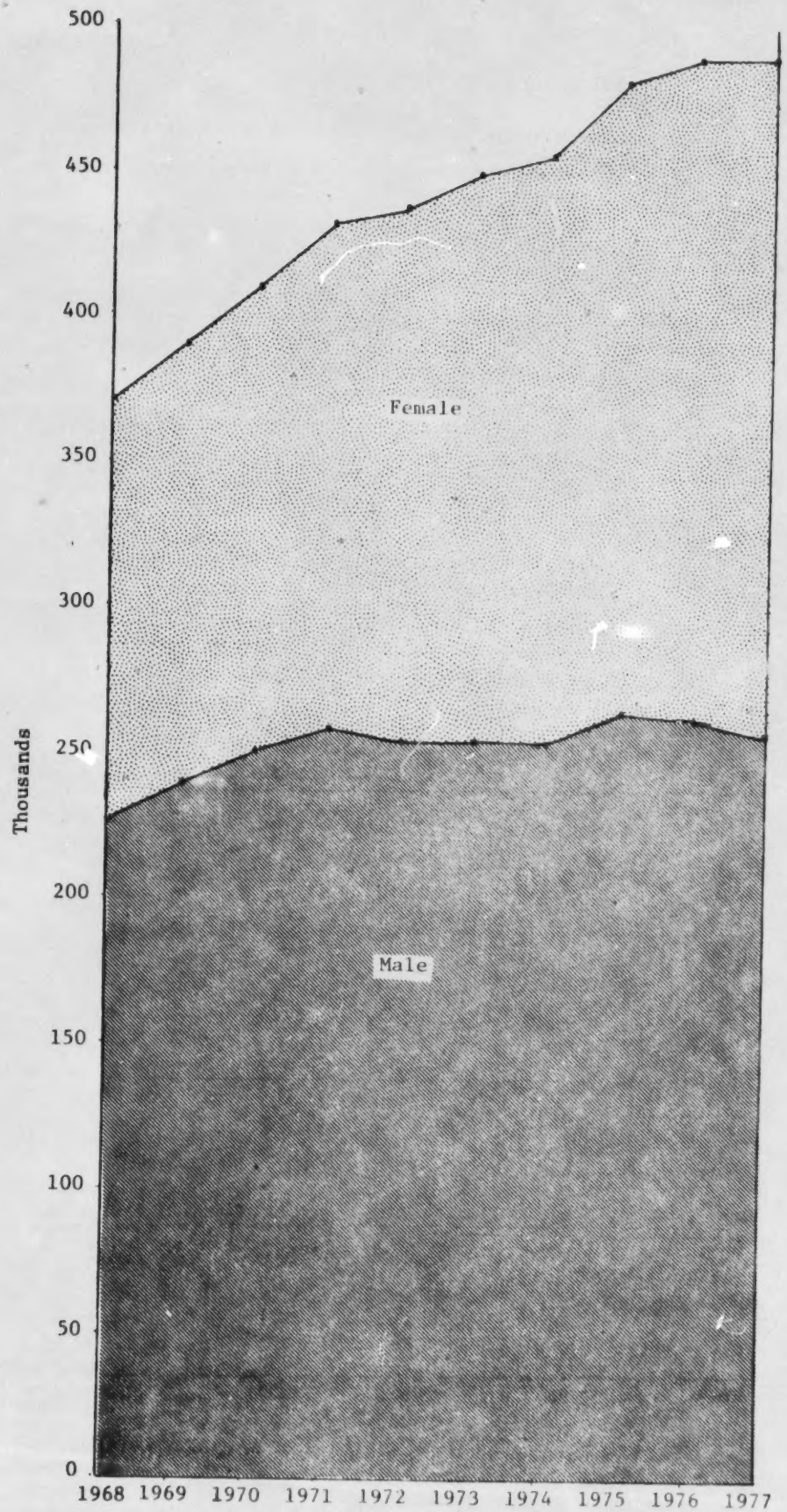
Source: Page 27 of *Occupational Outlook Handbook, 1978-79 Edition* (Bulletin 1955), Bureau of Labor Statistics, U.S. Department of Labor, 1978.

FIGURE 92
POSTSECONDARY ENROLLMENTS BY SEX: 1951-1977



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 93
TOTAL ENROLLMENTS IN INSTITUTIONS OF HIGHER EDUCATION IN PENNSYLVANIA BY SEX, FALL 1968-1977



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

A rise in part-time enrollments from 1968 to 1977 can be seen in Figure 94. Part-time enrollments have, however, only grown to a degree that is roughly proportional to college enrollment growth in general.

Figure 95 reflects the strong growth of public sector enrollments while the private college and university enrollments are seen as having increased only moderately and as having lost ground in terms of their share of all enrollments. Recent data, however, indicate that, for the last several years, the private sector has been increasing its share of incoming freshmen apparently as a result of the development of effective recruiting efforts. It should be remembered that Temple became state-related in 1965, Pittsburgh in 1966 and Lincoln in 1972.

Demography and the Future of Higher Education

As indicated in Chapter I, the birth decline that has occurred will eventually have an impact on the institutions of higher education in Pennsylvania. Figure 96, for example, shows the anticipated decline in the number of 18-year-olds in Pennsylvania between 1980 and 1990. It is evident here that the colleges of Pennsylvania face, in the near future, a dramatic decline in the number of those young people who traditionally comprise the largest part of those entering a college or university in any given year.

That this pattern is not unique to Pennsylvania can be seen in Figure 97 where we find that federally projected declines are very similar in pattern to those projected by John Senier of the Bureau of Information Systems, Pennsylvania Department of Education. The Chronicle of Higher Education data were modified somewhat by use of recent U.S. Census fiscal year projections.

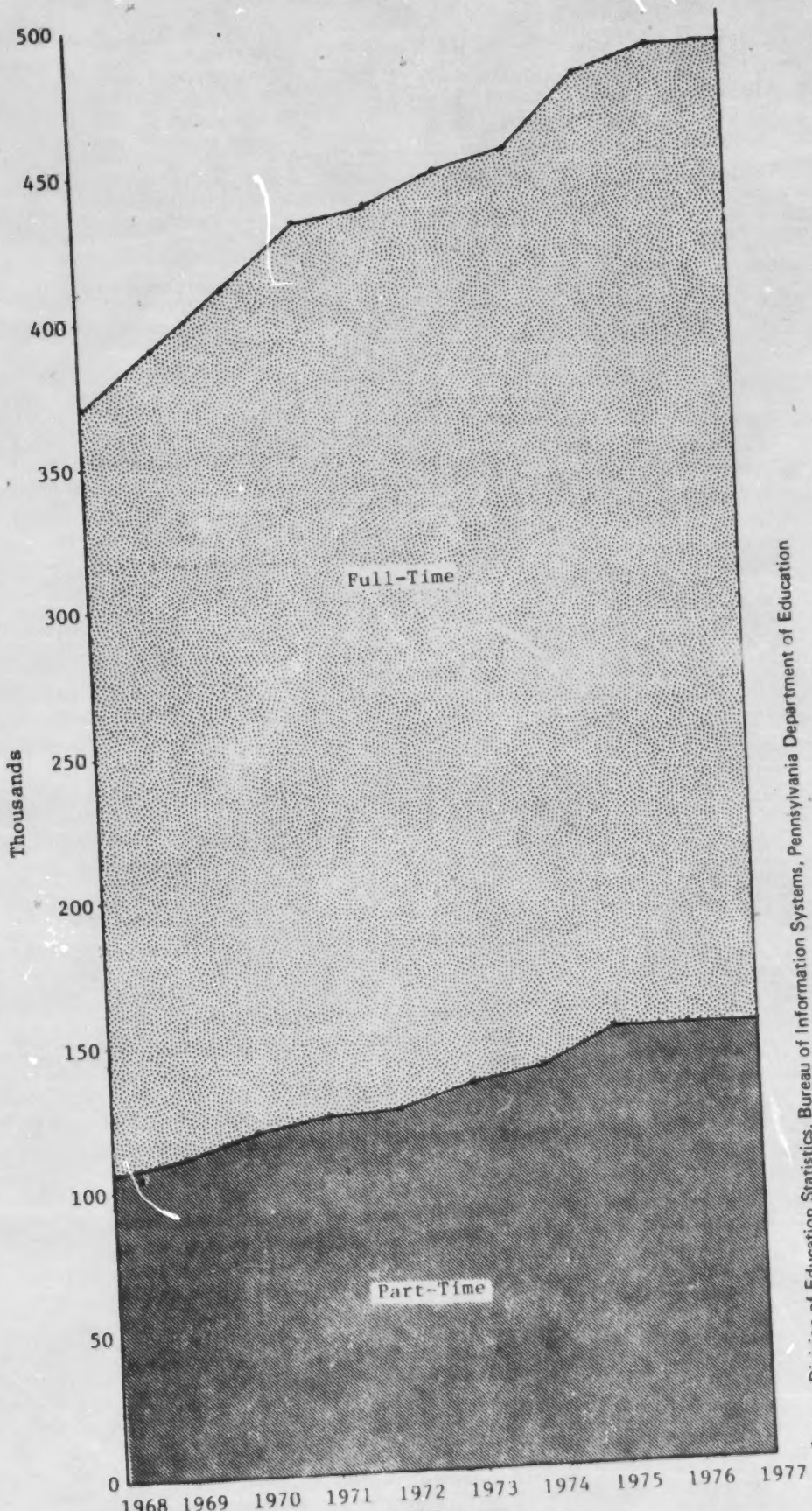
Figure 98 attempts to project those changes in age distribution that seem likely to affect the enrollment of students of various ages. Graduate and professional enrollments may not be markedly affected until sometime between 1990 and the year 2000--while adult and continuing education enrollments may continue to be strong and even increase into the year 2000. Unfortunately, as the age distribution of Table 48 indicated, the adult and continuing education aspect constitutes a small proportion of the total enrollment and therefore seems unlikely to become large enough to do more than ameliorate the anticipated decline in the traditional college age group.

Currently, the Pennsylvania Department of Education attempts to project enrollments based upon recent trends in participation rate, anticipated graduates and projections of population. These projections, of necessity, represent relatively conservative estimates of the enrollments to be expected in the future. There has been, however, an attempt to develop a model for projecting enrollments that reflects not only anticipated changes in age distribution but also anticipated changes in labor market demand.

This work is a by-product of the efforts of a recent task force on enrollment projections created by the Bureau of Higher Education Planning of the Pennsylvania Department of Education. This task force did produce some preliminary reports (phases one and two) but a change in priorities resulted in a dropping of this effort for the time being.

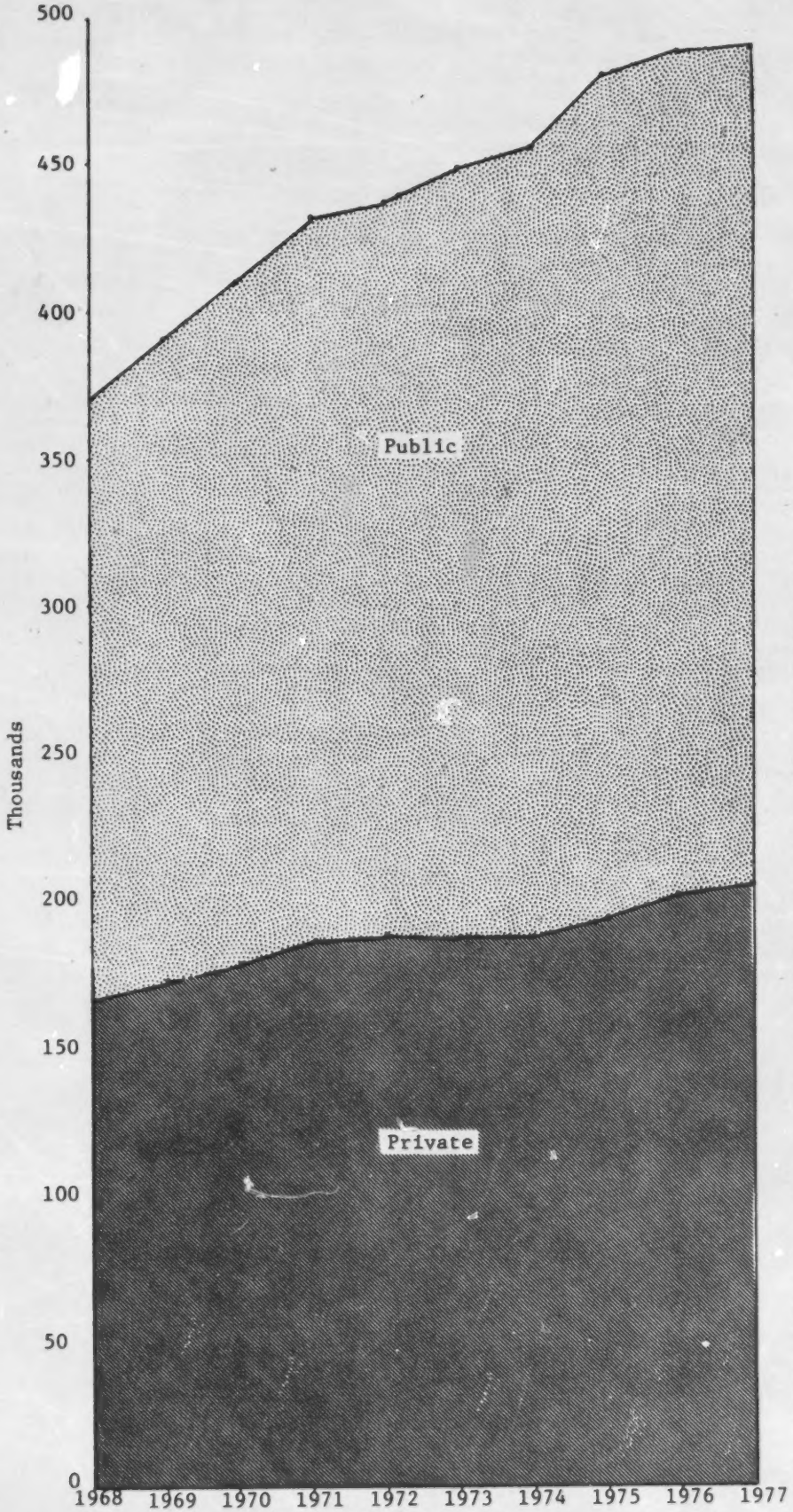
However, one of the members of this task force, Robert D. Newton of the Office of Budget and Planning of The Pennsylvania State University, did attempt to develop an enrollment projection model that would take into consideration the demographic age distribution at each point in time relative to known participation rates. At a later point he further developed a modification of his model, based upon labor market analyses of future demand.

FIGURE 94
TOTAL ENROLLMENTS IN INSTITUTIONS OF HIGHER EDUCATION IN PENNSYLVANIA BY ENROLLMENT STATUS, FALL 1968-1977



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

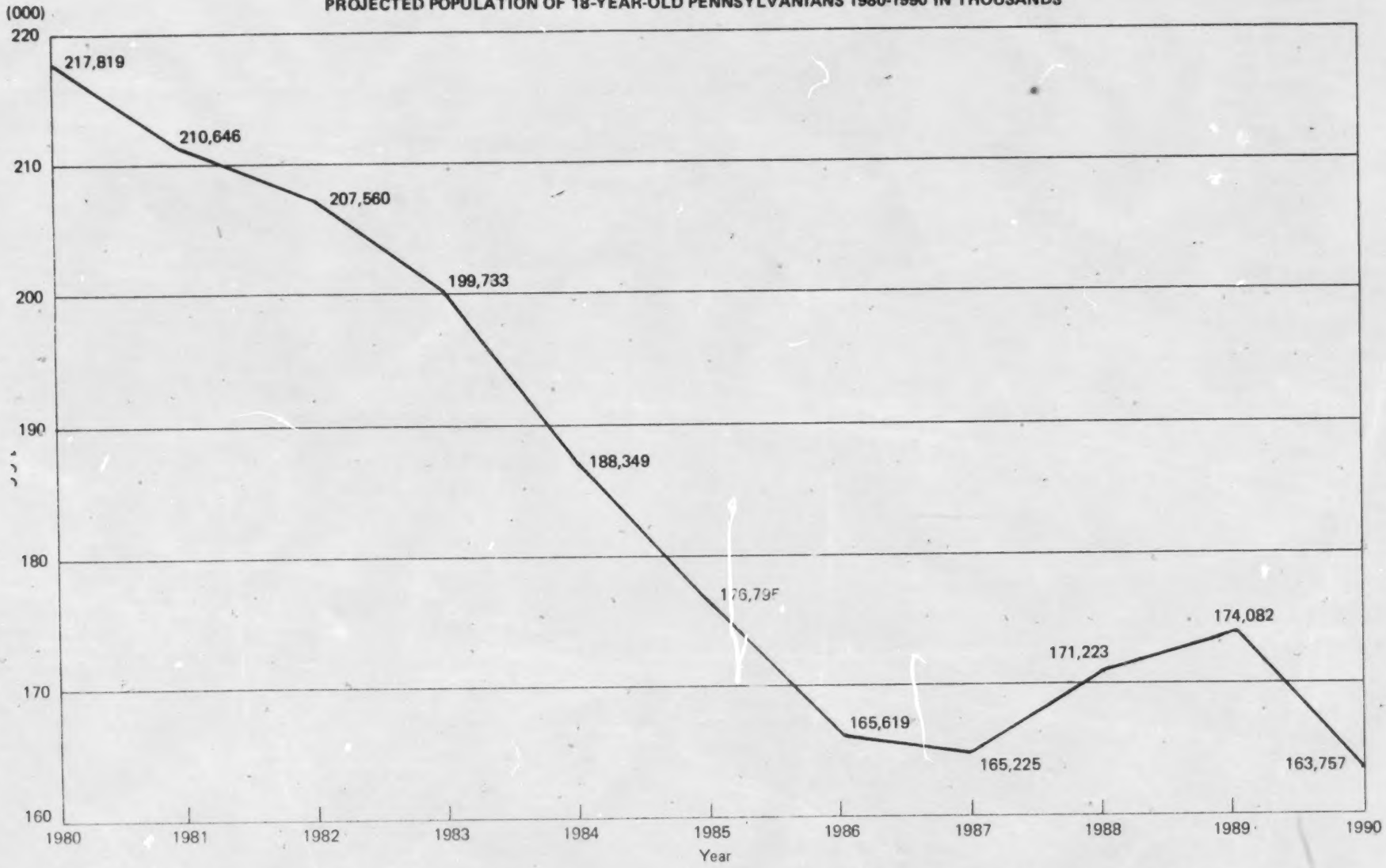
FIGURE 95
TOTAL ENROLLMENTS IN INSTITUTIONS OF HIGHER EDUCATION
IN PENNSYLVANIA BY TYPE OF INSTITUTION, FALL 1968-1977



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

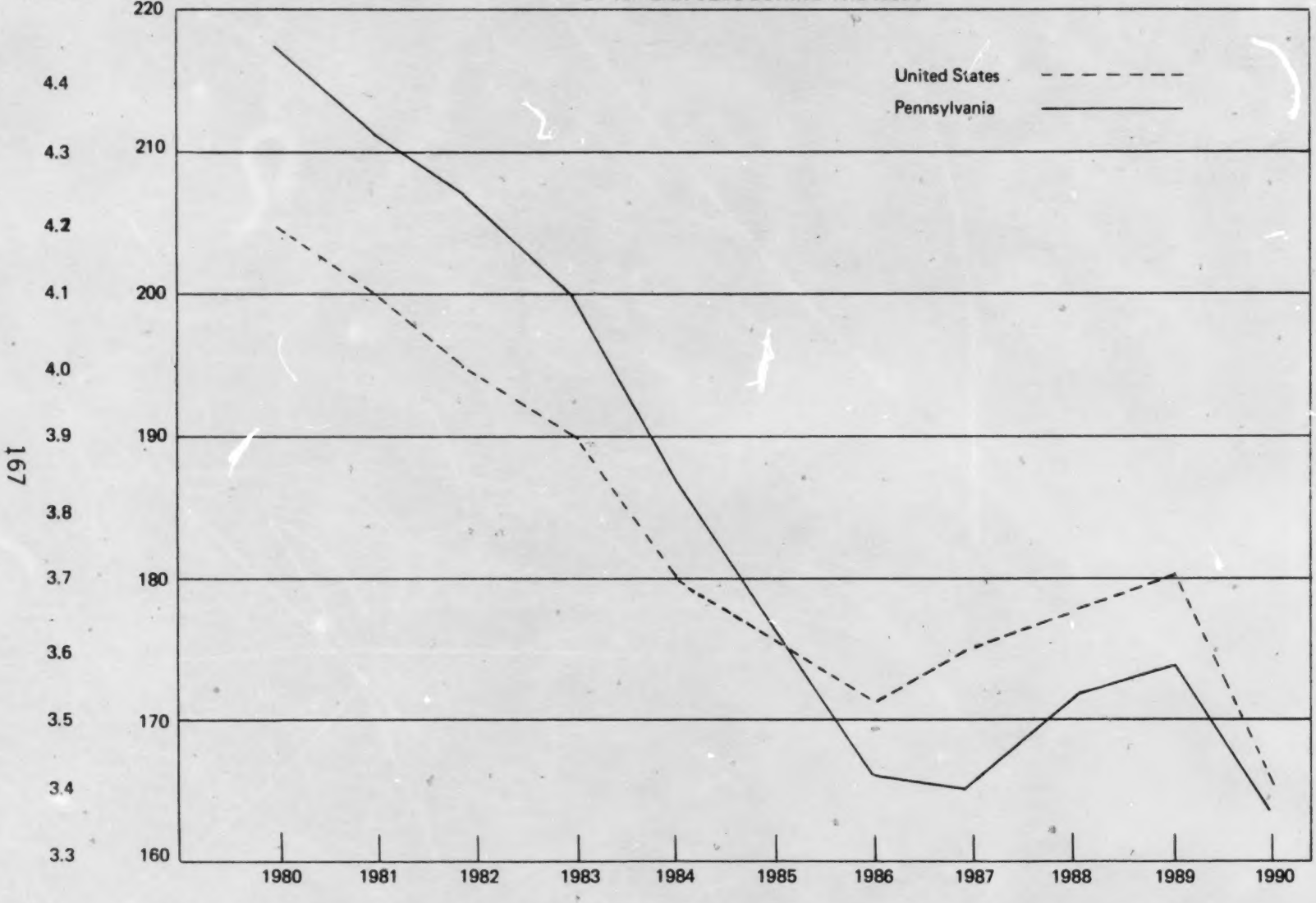
FIGURE 96

PROJECTED POPULATION OF 18-YEAR-OLD PENNSYLVANIANS 1980-1990 IN THOUSANDS[1]



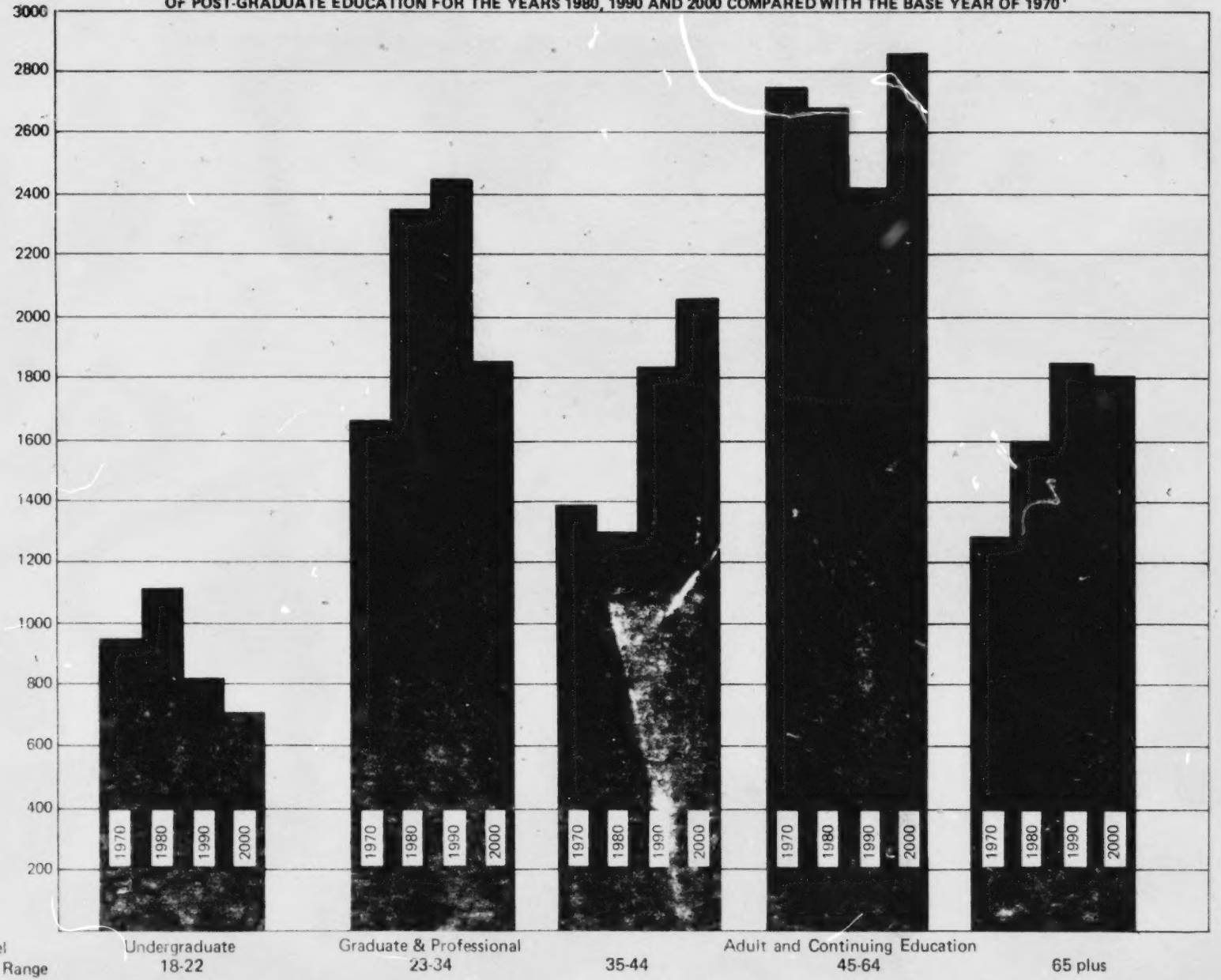
[1] Based upon unpublished Fiscal Year Projections by John Senier of the Division of Research, Bureau of Information Systems, The Pennsylvania Department of Education.

FIGURE 97
A COMPARISON BETWEEN U.S. BUREAU OF CENSUS AND PENNSYLVANIA (SENIER) PROJECTIONS OF 18-YEAR-OLDS DURING THE 1980's



Based on U.S. Bureau of Census data as reported by *The Chronicle of Higher Education* on Sept. 5, 1978 and the unpublished Pennsylvania projections by Senier found in Figure 96. Both lines are in terms of a fiscal rather than a calendar year, i.e., July 1 to July 1.

FIGURE 98 – PENNSYLVANIA POPULATION PROJECTIONS FOR AGE RANGES APPROXIMATELY PARALLEL TO LEVELS OF POST-GRADUATE EDUCATION FOR THE YEARS 1980, 1990 AND 2000 COMPARED WITH THE BASE YEAR OF 1970[1]



[1]Interpolated from current five-year-age interval data and projections provided by John Senier of the Bureau of Information Systems of the Pennsylvania Department of Education

In place of simple cohort methodology, Newton used projected age composition data, since the cohort approach is accurate only so long as the proportions of the different age groups remain stable. Newton anticipates that this stability will no longer be evident. In effect, he has taken into consideration different population sectors and, by so doing, has developed a somewhat more complex and, hopefully, more accurate projection model.

Figure 99, for example, shows the difference between a projection of college enrollments based on the number of 18-22-year-olds in the population (usual cohort method) and Newton's projection based upon the entire age range of the population. Because of the shift to fewer young and more adults (baby boom generation now in adult years, etc.) we see a much more optimistic projection of enrollment decline than when only 18- to 22-year-olds are used.

Newton also differentiates between full-time and part-time enrollments. Figure 100 gives his projections of growth and decline for each. The part-time enrollment rise is seen as being due to a marked increase in adult and continuing education resulting from the baby boom generation moving up into the age group that tends to seek such adult part-time education in our colleges and universities.

Newton more recently has attempted to project enrollments when the anticipated decline in the labor market for the college educated is reflected in lowered college participation rates. Newton discusses his model as follows:

> For the balance of this century, the effects of demographic forces on higher education enrollments are predictable with great certainty. The picture is not so clear with respect to the college participation rate, namely, that fraction of the college-eligible population electing to attend. Simple extrapolation of experience over the past decade suggests that participation rates may remain stable throughout the eighties. However, there is an emerging concern that the current stability in participation rates simply represents (an) apex before a long-term decline.

(This scenario has just recently been given increased stature by the Joint Economic Committee of the U.S. Congress through its acceptance of the views of Dresch and others concerning a long-term slowing of economic growth and a consequent reducing of labor market demand for the college educated).

Newton further points out that, by the middle of the 1980s, the proportion of the work force comprising the college trained will be two to three times its 1960 level of 10 percent. This, coupled with reduced opportunities resulting from a slower rate of economic growth due to a smaller annual gain in the aggregate labor force, should result in less incentives for college attendance and may cause the participation rate to fall significantly.

Stephen Dresch's model of this phenomenon has been used by Newton to project Pennsylvania's enrollments. If the economic impact suggested by the work of Dresch and other economists is correct, then this model may be indicative of what we can expect.

Dresch's model seems to be based on the premise that the decision to attend college may be predicted from the relative wage levels between college-trained manpower and other workers in the labor force.[1] As the college-educated proportion

[1]Dresch, Stephen P. "Human Capital and Economic Growth" Retrospect and Prospect," Human Capital, Vol. II, May 24, 1977, U.S. Government Printing Office, pp. 112-153.

FIGURE 99
COMPARISON OF ENROLLMENT PROJECTIONS FROM DEMOGRAPHIC MODEL AND COLLEGE-AGE (18-22 YEARS) COHORT

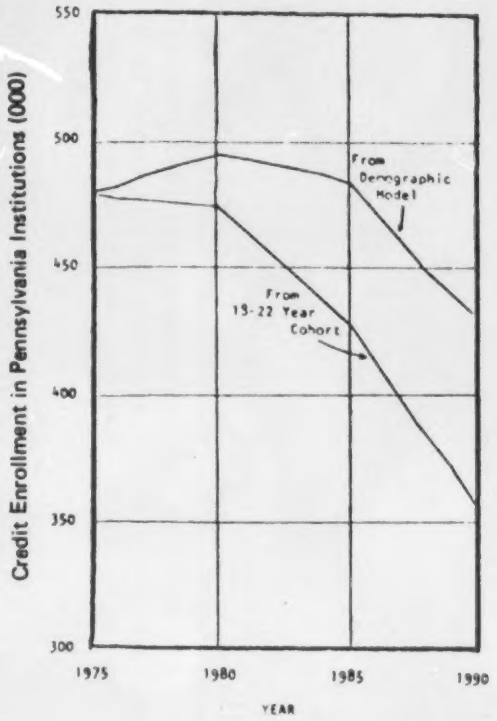
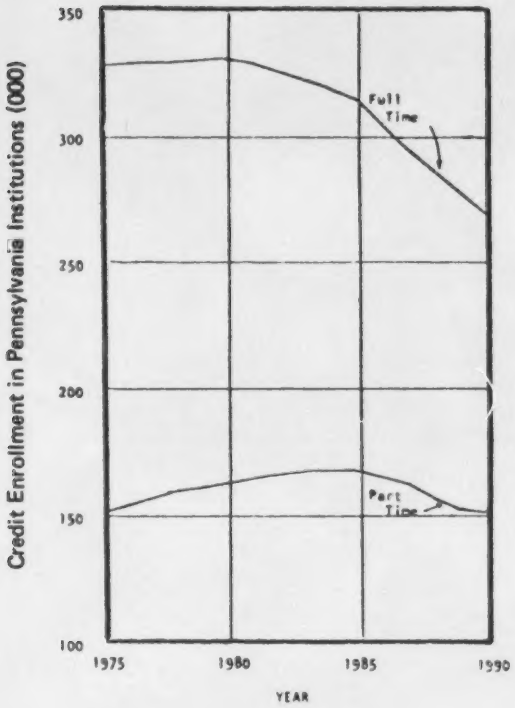


FIGURE 100
DIFFERENTIATION BY ATTENDANCE STATUS OF ENROLLMENT PROJECTION FROM DEMOGRAPHIC MODEL



Source: Newton, Robert D. "Assessing the Impacts of Future Student Demand: An Application of a Demographically Differentiated Projection Model," in *Conflicting Pressures in Postsecondary Education,* Association for Institutional Research, 1976, pp. 113-118. (The author is in the Office of Budget and Planning of The Pennsylvania State University.)

of the work force increases and moves beyond the equilibrium between supply and demand, the relative wages for college-trained personnel fall and, as a consequence, the proportion of the college-eligible population deciding to enroll in college declines. Conversely, when the college-educated fraction decreases, the reverse occurs.

Using Dresch's projections of the proportions of new entrants to the labor force represented by college graduates (five-year intervals) between 1980 and 2005 and assuming a five-year lag between the decision to enter college and graduation, Newton has computed college participation rates for each five-year interval, relative to the observed rate for 1975, i.e., giving 1975 a rate of 1.00.

In order to reflect the effect of the projected declines upon the current actual participation rate of each population sector, predicted changes in participation rates were derived by entering the following values into Newton's demographically differentiated computer model.

Year	Relative Rate
1975	1.00
1980	1.00
1985	0.85
1990	0.60
2000	0.50

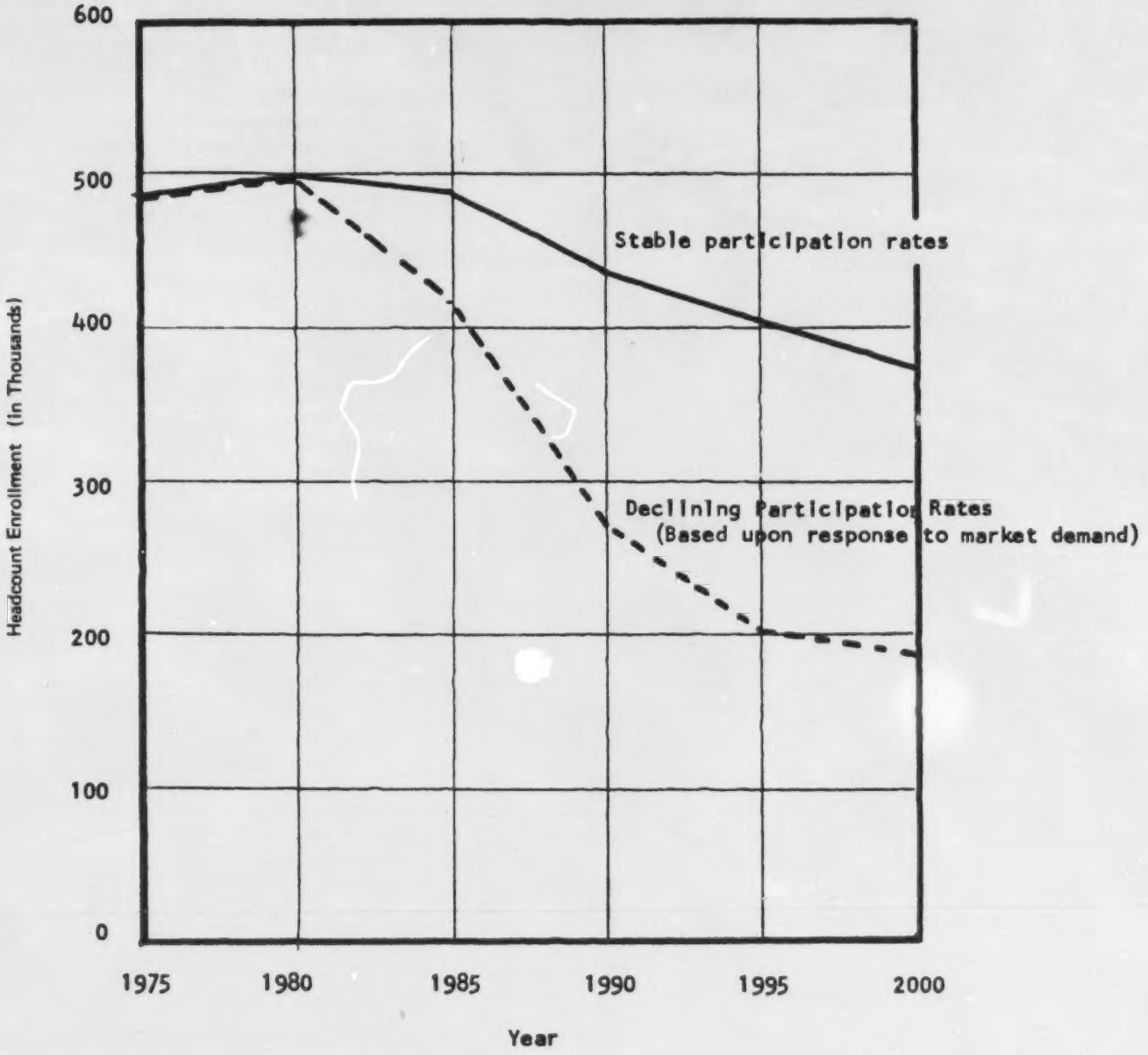
In effect, if Stephen Dresch is correct in his analysis, the current participation rate should drop to half its current value by 1995. In other words, it could drop to a figure of around 21 percent of the high school graduates instead of the current 42 percent. This figure of 21 percent is reminiscent of pre-World War II rates of participation.

Figure 101 compares these declining participation projections with the stable (demography only) participation rate projections made earlier by Newton. The difference between them is, of course, dramatic. It presages a period of literally traumatic change and crisis for higher education. Figure 102 also contrasts these two projections but breaks the projected enrollments down further into full-time and part-time enrollments.

It is entirely possible that these two projections represent the parameters within which actual enrollments will fall. College graduates may still be better able to find employment but nevertheless be underemployed by present standards. Colleges may indeed be able to expand their adult and continuing education roles, etc. It is nevertheless quite clear that our institutions will have to begin planning their response to such contingencies, should they arise, if they are to survive.

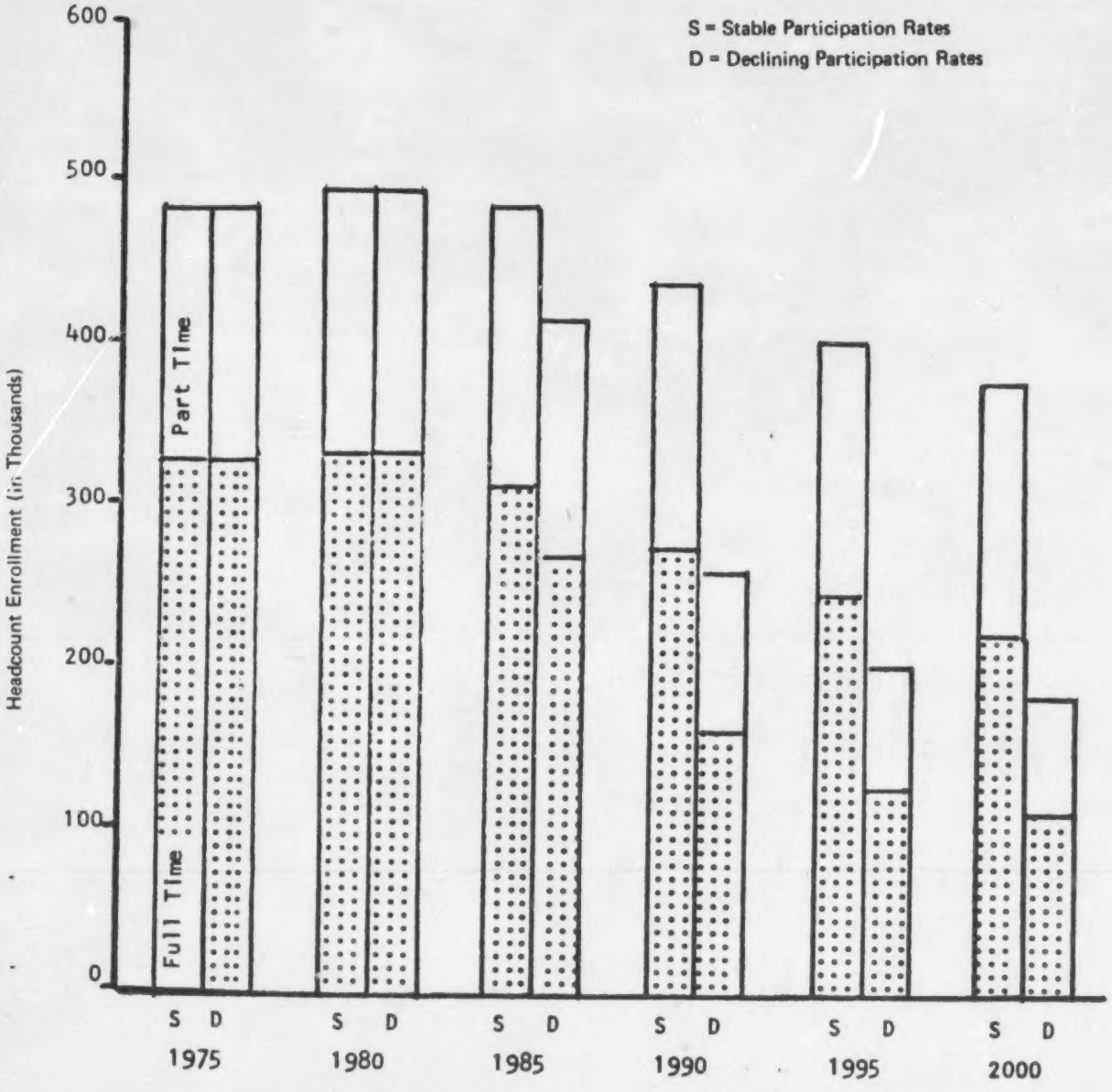
When we look at the relatively conservative projections of the Division of Education Statistics of the Department of Education for the years 1978 through 1987, we find that their projections in Figure 103 are very close to Newton's demographically differentiated model projections when Newton assumes a stable participation rate (Figure 101). In Figure 104, only the community colleges are seen as being relatively unscathed by the decline in births. The private institutions, in contrast, are seen as being the most affected. The projected growth in part-time students is, of course, particularly striking in Figure 103.

FIGURE 101
FALL TERM HEADCOUNT CREDIT ENROLLMENTS FOR PENNSYLVANIA



Source: Newton, Robert D., Office of Budget and Planning, The Pennsylvania State University

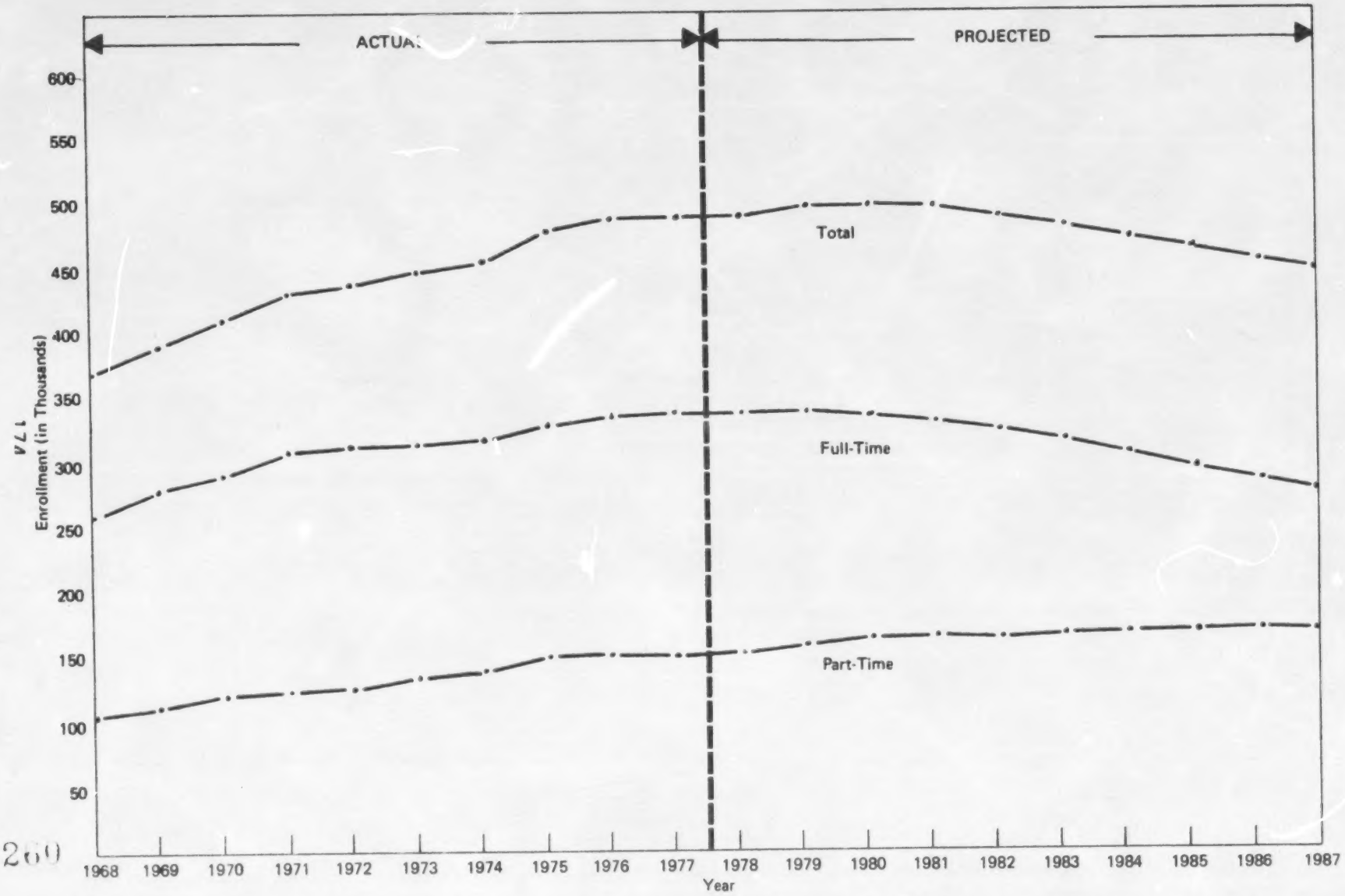
FIGURE 102
FALL-TERM FULL- AND PART-TIME HEADCOUNT CREDIT ENROLLMENTS



Source: Newton, Robert D., Office of Budget and Planning, The Pennsylvania State University

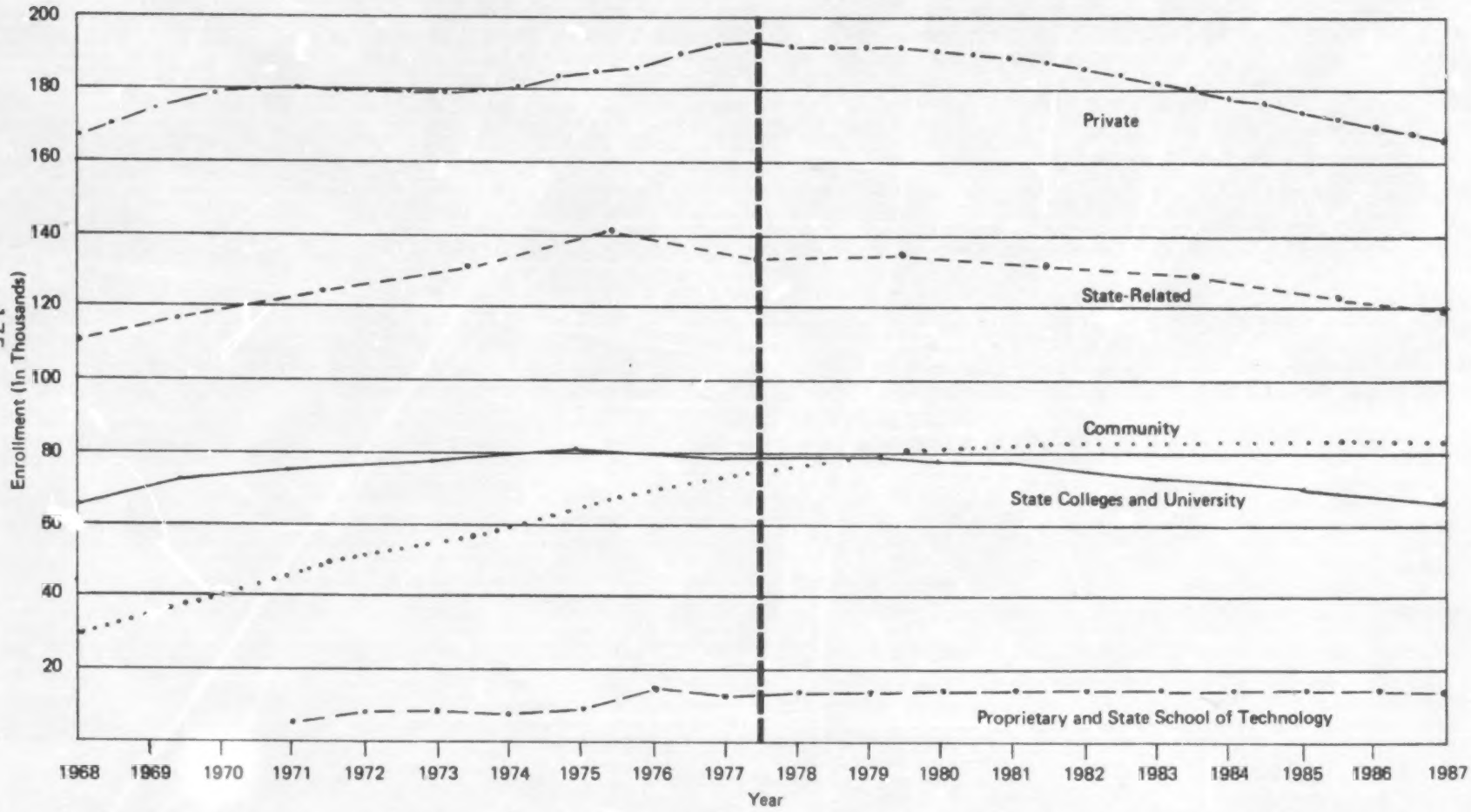
FIGURE 103

ACTUAL AND PROJECTED TOTAL, PART- AND FULL-TIME ENROLLMENT IN PENNSYLVANIA'S HIGHER EDUCATION INSTITUTIONS[1]



[1] *Projections: Selected Education Statistics for Pennsylvania to 1987-88,* Bureau of Information System , Pennsylvania Department of Education

FIGURE 104
ACTUAL AND PROJECTED FALL HIGHER EDUCATION ENROLLMENTS BY SEGMENT[1]



[1]*Projections: Selected Education Statistics for Pennsylvania to 1987-88,* Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978)

Table 53, below, indicates the nature of the increase in the proportion of part-time students that has been recently taking place and which is projected to take place between 1977 and 1987 in each segment of higher education. While the proportion of part-time students is seen by the Division of Education Statistics as increasing by about 7 percent overall, much growth is seen as taking place in the community colleges (54.8 to 66.3 percent).

Table 53

Projected Growth by Segment of the Proportion of Part-Time Students in Pennsylvania Colleges[1]

Fall	All Institutions	State Colleges & University	State-Related	Community	Private
	%	%	%	%	%
1977 (Actual)	30.8	19.9	31.6	54.8	27.3
		Projected			
1982	33.7	22.5	31.9	60.9	29.7
1987	37.8	25.9	34.?	66.3	33.3

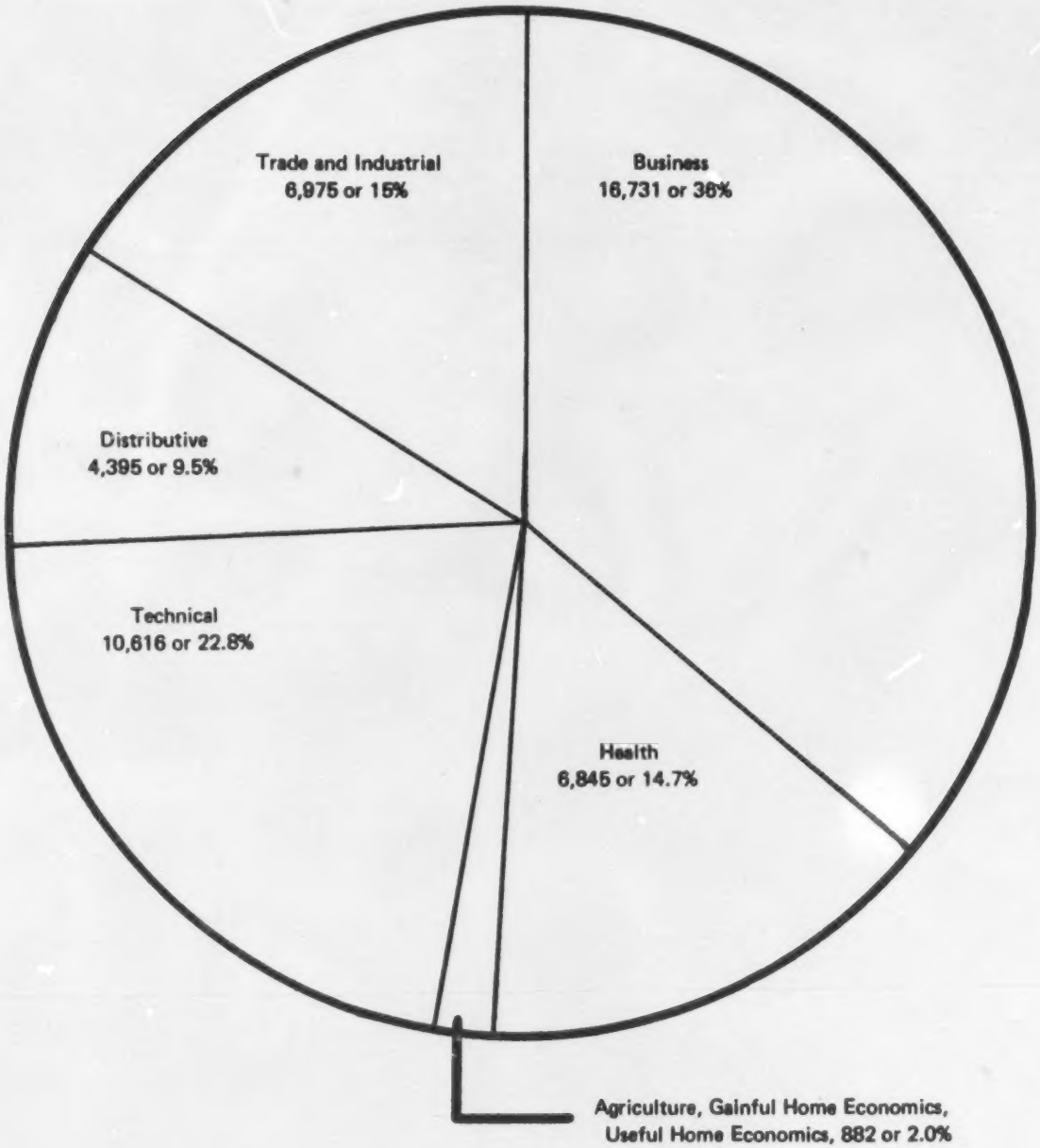
[1]Derived from Table 6 of Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

The Occupational Program Student in Higher Education

The projected growth of community college enrollments, proprietary school enrollments, particularly of part-time enrollments indicates the changes in the labor market that seem to be occurring; more and more of the available jobs are in service and technical areas requiring an associate degree or some training beyond the high school. This trend parallels the development of the vocational education component of basic education. The community college, for example, has grown into a substantial enterprise since 1966 when there was only one community college (Harrisburg). It is now an important part of the higher education system (Figure 104).

Figure 105 gives a picture of the distribution of occupational program enrollments in Pennsylvania's community colleges in school year 1977-78. These students, as can be seen in Table 54, grew in relative numbers from 37 percent of all community college students in 1966 to 52.2 percent in 1976, with a high of 56.5 percent in 1974. This apparently is a reflection of current labor market needs and student perceptions of the outlook for college graduates that existed during this period. Figure 106 graphically shows the reversal in the relative number of transfer students that occurred between 1971 and 1976. The declining proportion for 1976 is due to a few institutions that introduced an academic program for the first time or had a sudden unexplained jump in transfer students.

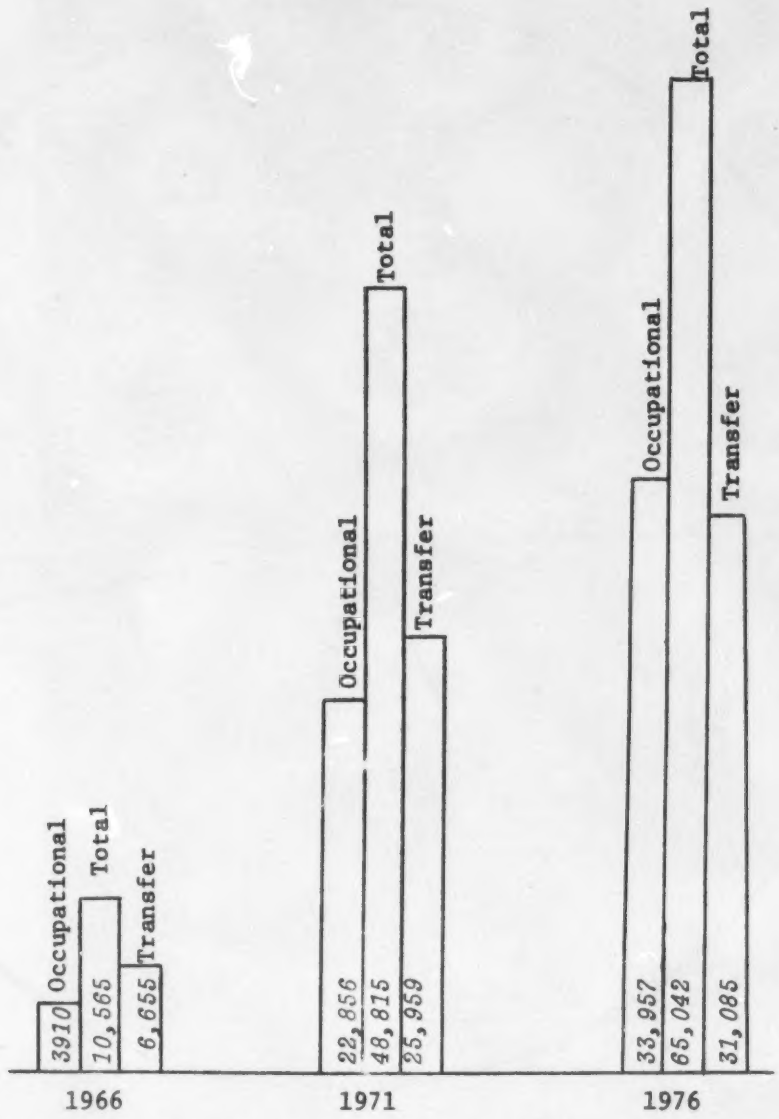
FIGURE 105
OCCUPATIONAL PROGRAM STUDENT POPULATION IN PENNSYLVANIA COMMUNITY COLLEGES, 1977-1978[1]



[1]Pennsylvania Department of Education, Vocational Education Management Information Systems, Harrisburg, Pennsylvania, 1978

FIGURE 106

PENNSYLVANIA COMMUNITY COLLEGE OCCUPATIONAL, TRANSFER AND TOTAL ENROLLMENTS, 1966, 1971 AND 1976[1]



[1] *Directory Listing Curriculums Offered in the Community Colleges of Pennsylvania*, Bureau of Academic Programs, Pennsylvania Department of Education, Harrisburg, Pennsylvania, 1977.

Table 54

Trends in Pennsylvania Community College Occupational, Transfer and Total Enrollments, 1966 to 1976[a]

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Occupational	3,910	7,955	13,489	16,643	20,661	22,856	25,046	30,180	32,976	32,436	33,9
Transfer	6,655	11,932	17,187	19,452	21,063	25,959	24,588	25,567	25,359	27,916	31,0
Total	10,565	19,887	30,676	36,095	41,724	48,815	49,634	55,747	58,335	60,352	65,0
Percent Occupational	37.0	40.0	44.0	46.2	49.5	46.8	50.5	54.1	56.5	53.7	52

[a]Directory Listing Curriculums Offered in the Community Colleges of Pennsylvania, Bureau of Academic Programs, Pennsylvania Department of Education, 1972 through 1977.

Table 55

Pennsylvania Community College Student Transfers to Higher Education Institutions in the Commonwealth, Fall Term 1972 Through Fall Term 1976[a]

Type Institution	1972	1973	1974	1975	1976
State Colleges and University	1,326	1,256	1,128	1,384	1,324
State-Related	1,507	1,883	1,893	1,652	1,536
Private State-Aided	182	133	190	186	179
Community Colleges	133	90	75	178	169
Private Colleges/Universities	740	995	771	1,056	1,271
Theological Seminaries	--	1	--	--	2
Private Junior Colleges	25	29	51	29	55
Proprietary	41	33	63	58	64
TOTAL	3,954	4,420	4,171	4,543	4,600
Total Community College Enrollments[1]	50,675	54,449	59,737	68,071	69,081

[a]"Supplemental Enrollment Data of Institutions of Higher Education in Pennsylvania," Fall 1972 through Fall 1976, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, 1973, 1974, 1975, 1976 and 1977.

[1]Our Colleges and Universities Today, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Vol. XV, No. 1, 1978.

The Community College Transfer Student

Figure 107 indicates the number and proportion of community college students going on to a private or a public four-year college or university. The proportion going on to a private college is seen here as increasing substantially between 1972 and 1976, a somewhat surprising finding. Again a possible indication of aggressive recruiting on the part of the private colleges.

Table 55 gives a picture of where these transfer students have been going with regard to the type of institution involved. Again, we see an increase of transfers to a private college or university from the community colleges.

Some increase in transfers is also found for those who have simply transferred to another two-year institution, such as another community college, a private junior college or a proprietary school.

Figure 108 shows the actual growth in associate degrees awarded, and Table 56 indexes the relative growth of the associate degree during a similar period, using 1971-72 as the base year. Table 56 reflects relative growth or decline in the number of associate degrees awarded overall and for each higher education segment. Table 56 also makes projections of the relative growth of each segment and of the awarding of associate degrees as a whole.

The associate degree has shown the greatest growth in the state-owned colleges although, numerically, the majority of such degrees are awarded by the community colleges and other segments. Only the private colleges and universities are seen as declining in the number of associate degrees awarded, while, in turn, the community colleges are seen as experiencing the most growth. The decline for the private colleges and universities may, of course, reverse itself if the anticipated enrollment decline forces these institutions into a re-evaluation of their role and mission that leads to greater involvement at the associate degree level.

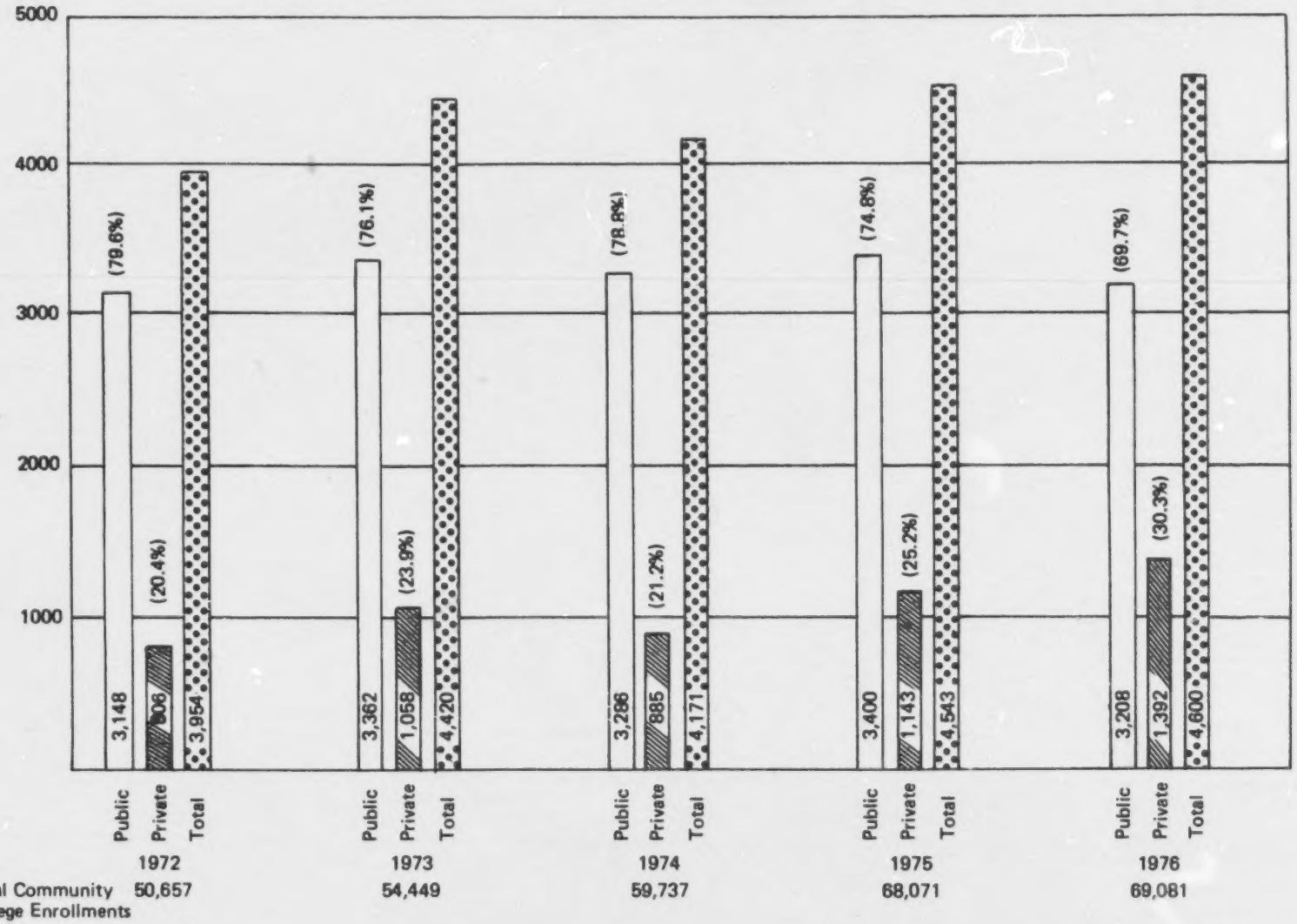
Bachelor's and Higher Degree Growth

Figure 108 also indicates the number of bachelor's degrees awarded in recent years and the number projected to be awarded between 1976-77 and 1987-88. Figure 109 similarly indicates actual and projected degrees awarded above the bachelor's level. Consonant with the Division of Education Statistics' projections of enrollments, the number of degrees awarded is seen as declining during this period, with the exception of the doctoral and first professional (dentistry, law, medicine, etc.) degrees. As in Table 56, Tables 57 through 60 similarly index the growth or decline for degrees awarded since the year 1971-72. Here we see that only the state-related schools have been holding their own on the baccalaureate level. The private colleges and universities are declining least at the master's level. The state-related institutions have been declining least at the doctoral level and showing strong growth with regard to the awarding of the first professional degree.

Table 61, in addition, indicates minority graduates by institution and by degree level with regard to degrees awarded between 1973-74 and 1976-77. Minority representation has increased during this period. The only exception is the master's and doctorate degrees awarded by theological seminaries, where there has been a marked decline in minority representation.

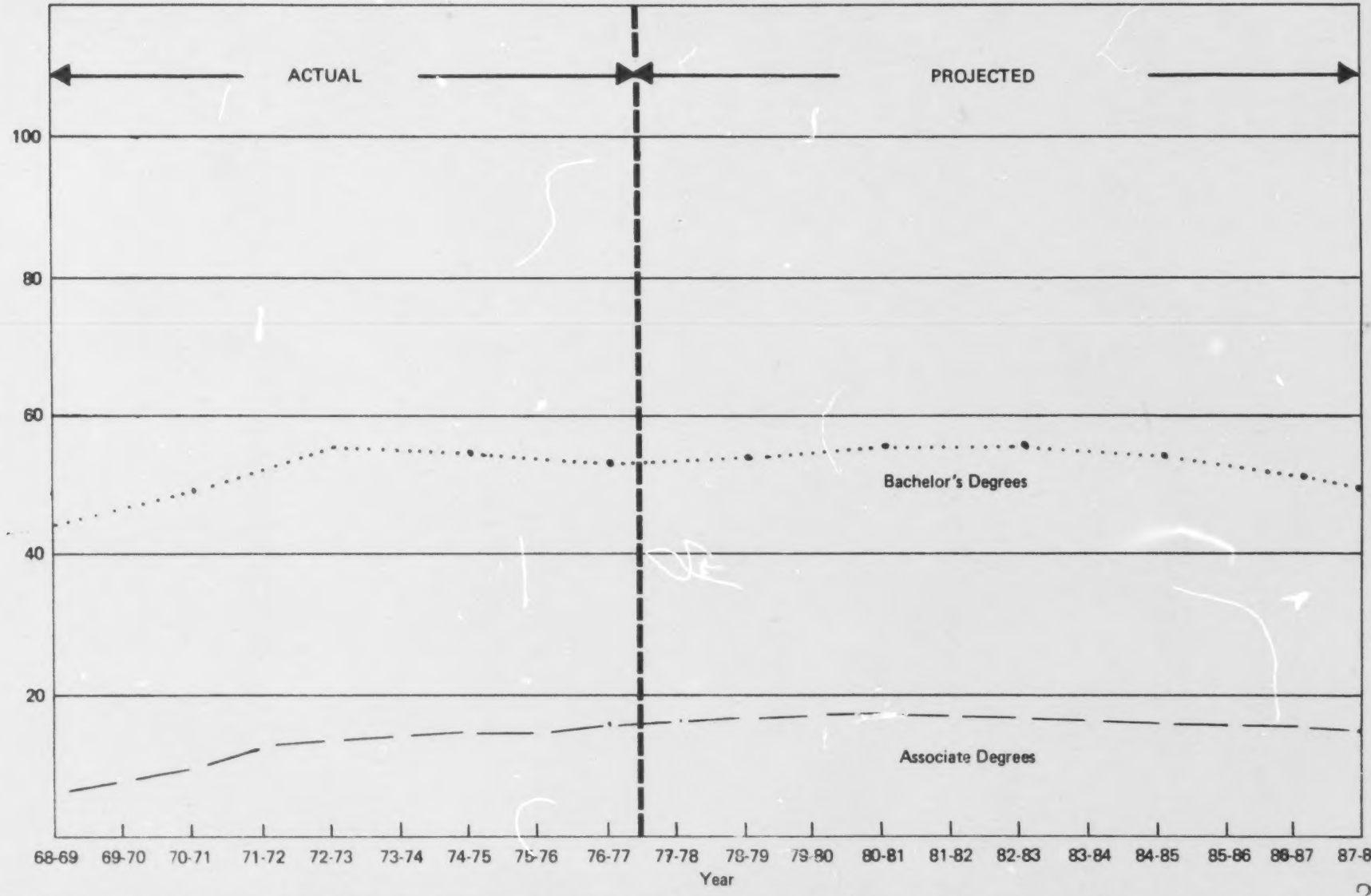
FIGURE 107

PENNSYLVANIA COMMUNITY COLLEGE STUDENT TRANSFERS TO PUBLIC (TAX SUPPORTED) AND PRIVATE (INDEPENDENT) HIGHER EDUCATION INSTITUTIONS IN THE COMMONWEALTH, FALL TERMS, 1972 THROUGH FALL TERM, 1976[1]



[1]Based upon data found in the *Higher Education Supplemental Enrollment Data* series published by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 108
ACTUAL AND PROJECTED (TO 1987-88) UNDERGRADUATE DEGREES AWARDED BY PENNSYLVANIA'S INSTITUTIONS OF HIGHER EDUCATION



[1]Based on Table 8, *Projections: Selected Education Statistics for Pennsylvania to 1987-88*, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978)

Table 56

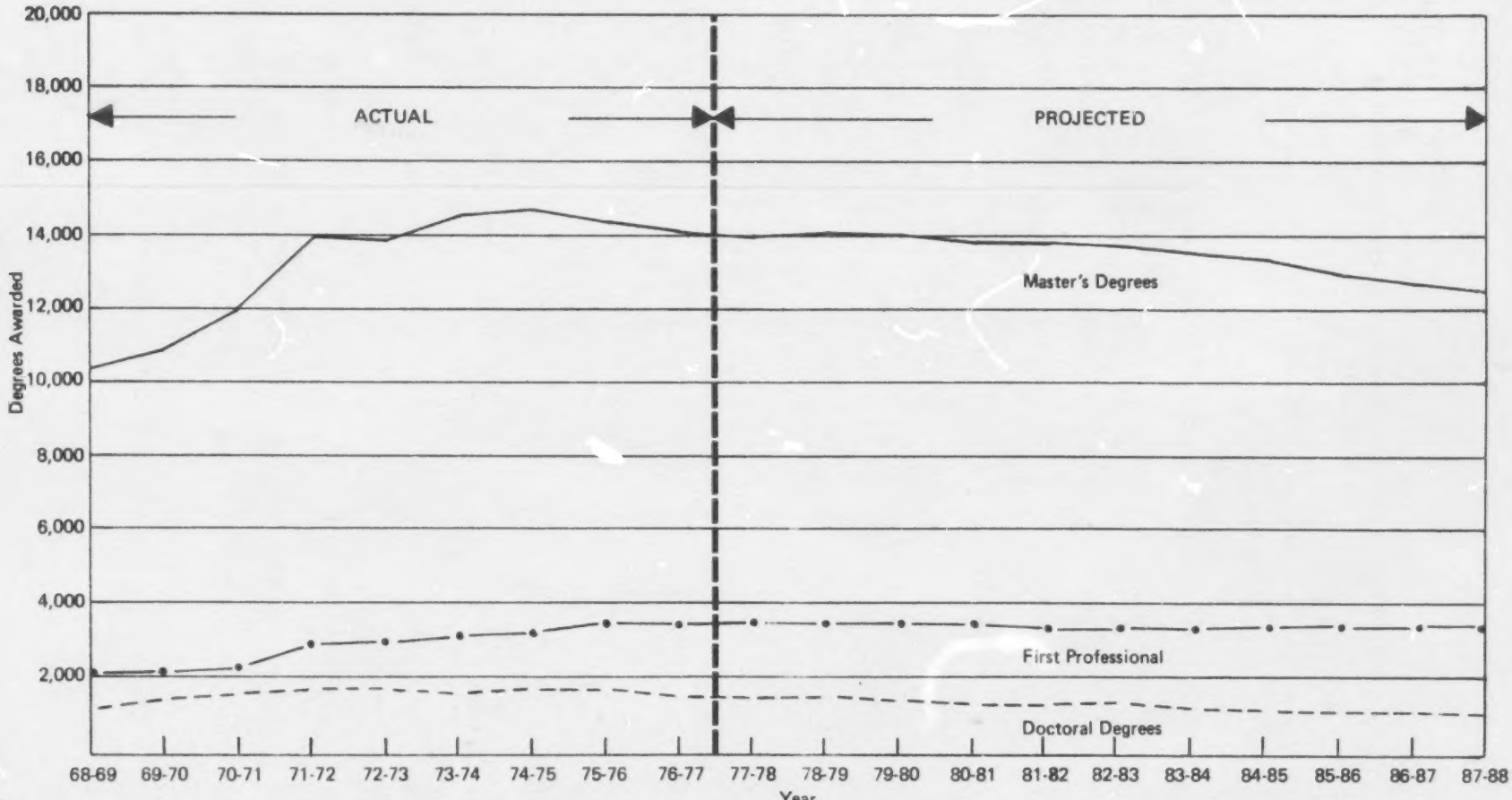
Actual and Projected Indexed Growth in Associate Degrees Awarded in Pennsylvania by Institutional Type (Base Year = 1971-72)[1]

Year	Total Awarded	State Colleges and University	State-Related	Private	Community Colleges	Proprietary and State School of Technology
1971-72	Index = 1.00	1.00	1.00	1.00	1.00	1.00
1972-73	1.06	1.60	0.98	0.97	1.09	1.16
1973-74	1.10	1.40	0.94	0.93	1.17	1.20
1974-75	1.09	2.47	0.97	0.93	1.19	1.09
1975-76	1.12	3.47	1.10	0.92	1.24	1.05
1976-77	1.20	7.00	1.18	0.99	1.28	1.22
			Projected[2]			
1977-78	1.24	-	1.18	1.02	1.32	1.27
1978-79	1.28	-	1.25	1.02	1.37	1.31
1979-80	1.30	-	1.25	0.98	1.40	1.35
1980-81	1.31	-	1.32	0.95	1.43	1.35
1981-82	1.31	-	1.32	0.92	1.43	1.39
1982-83	1.28	-	1.32	0.88	1.40	1.35
1983-84	1.25	-	1.25	0.85	1.37	1.35
1984-85	1.23	-	1.25	0.85	1.34	1.31
1985-86	1.20	-	1.18	0.81	1.32	1.27
1986-87	1.18	-	1.18	0.81	1.30	1.23
1987-88	1.15	-	1.11	0.78	1.28	1.20
Final Values	(15,400)	-	(1,600)	(2,300)	(8,200)	(3,100)
Base Year Values	(13,355)	(15)	(1,439)	(2,946)	(6,362)	(2,593)
Numerical Change	+2,045	-	+161	-646	+1,838	+507

[1]Based on Table 8, Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

[2]No projections for the state colleges and university are shown since the numbers involved are too small and the numerical projections were rounded to the nearest hundred.

FIGURE 109
ACTUAL AND PROJECTED (TO 1987-88) GRADUATE DEGREES AWARDED BY PENNSYLVANIA'S INSTITUTIONS OF HIGHER EDUCATON[1]



[1]Based on Table 8, *Projections: Selected Education Statistics for Pennsylvania to 1987-88*, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978)

Table 57

Actual and Projected Indexed Growth in Bachelor's Degrees Awarded in Pennsylvania by Institutional Type (Base Year = 1971-72)[1]

Year		Total Awarded	State Colleges and University	State-Related	Private
1971-72	Index =	1.00	1.00	1.00	1.00
1972-73		1.07	1.10	1.10	1.04
1973-74		1.08	1.15	1.08	1.05
1974-75		1.06	1.08	1.07	1.04
1975-76		1.04	1.01	1.10	1.02
1976-77		1.02	0.99	1.09	1.00
			Projected		
1977-78		1.03	0.96	1.12	1.02
1978-79		1.04	0.95	1.13	1.03
1979-80		1.05	0.94	1.16	1.05
1980-81		1.07	0.93	1.20	1.08
1981-82		1.08	0.93	1.20	1.08
1982-83		1.07	0.91	1.21	1.08
1983-84		1.06	0.90	1.20	1.06
1984-85		1.04	0.87	1.20	1.04
1985-86		1.01	0.82	1.18	1.02
1986-87		0.98	0.79	1.15	0.99
1987-88		0.95	0.76	1.12	0.95
Final Values		(50,000)	(10,000)	(15,600)	(24,400)
Base Year Values		(52,696)	(13,175)	(13,947)	(25,574)
Numerical Change		-2,696	-3,175	+1,653	-1,174

[1]Based on Table 8, Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

Table 58

Actual and Projected Indexed Growth in the Awarding of Master's Degrees in Pennsylvania by Institutional Type (Base Year = 1971-72)[1]

Year		Total Awarded	State Colleges and University	State-Related	Private
1971-72	Index =	1.00	1.00	1.00	1.00
1972-73		0.99	1.05	0.93	1.02
1973-74		1.04	1.32	0.88	1.08
1974-75		1.05	1.39	0.83	1.14
1975-76		1.03	1.21	0.86	1.13
1976-77		1.01	1.23	0.81	1.11
			Projected		
1977-78		1.00	1.21	0.81	1.11
1978-79		1.01	1.21	0.83	1.11
1979-80		1.00	1.17	0.83	1.11
1980-81		1.00	1.17	0.83	1.09
1981-82		0.99	1.17	0.83	1.08
1982-83		0.98	1.13	0.83	1.08
1983-84		0.97	1.13	0.81	1.06
1984-85		0.95	1.09	0.81	1.04
1985-86		0.93	1.05	0.79	1.02
1986-87		0.91	1.01	0.78	1.01
1987-88		0.90	0.97	0.78	0.99
Final Values		(12,600)	(2,500)	(4,600)	(5,500)
Base Year Values		(14,070)	(2,572)	(5,924)	(5,574)
Numerical Change		-1,470	- 72	-1,324	- 74

[1]Based on Table 8, Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

Table 59

Actual and Projected Indexed Growth in the Awarding of Doctoral Degrees in Pennsylvania by Institutional Type (Base Year = 1971-72)[1]

Year	Total Awarded	State Colleges and University	State-Related	Private
1971-72	Index = 1.00	1.00	1.00	1.00
1972-73	1.00	2.00	1.03	0.96
1973-74	0.91	3.00	0.92	0.90
1974-75	0.97	2.00	1.04	0.88
1975-76	1.00	2.50	1.03	0.95
1976-77	0.90	1.00	0.96	0.81
		Projected[2]		
1977-78	0.88	-	0.97	0.76
1978-79	0.88	-	0.97	0.76
1979-80	0.82	-	0.87	0.76
1980-81	0.77	-	0.87	0.64
1981-82	0.77	-	0.87	0.64
1982-83	0.77	-	0.87	0.64
1983-84	0.71	-	0.78	0.64
1984-85	0.66	-	0.78	0.51
1985-86	0.66	-	0.78	0.51
1986-87	0.66	-	0.78	0.51
1987-88	0.66	-	0.78	0.51
Final Values	(1,200)	-	(800)	(400)
Base Year Values	(1,821)	(2)	(1,031)	(788)
Numerical Change	-621	-	-231	-388

[1]Based on Table 8, Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

[2]No projections for the state colleges and university are shown since the numbers involved are too small and the numerical projections were rounded to the nearest hundred.

Table 60

Actual and Projected Indexed Growth in First-Professional Degrees Awarded in Pennsylvania by Institutional Type (Base Year = 1971-72)[1]

Year	Total Awarded	State-Related	Private
1971-72	Index = 1.00	1.00	1.00
1972-73	1.07	1.12	1.02
1973-74	1.11	1.17	1.08
1974-75	1.13	1.27	1.08
1975-76	1.20	1.29	1.15
1976-77	1.20	1.31	1.15
	Projected		
1977-78	1.23	1.37	1.17
1978-79	1.23	1.37	1.17
1979-80	1.19	1.37	1.12
1980-81	1.19	1.37	1.12
1981-82	1.19	1.37	1.12
1982-83	1.19	1.37	1.12
1983-84	1.19	1.37	1.12
1984-85	1.19	1.37	1.12
1985-86	1.19	1.37	1.12
1986-87	1.19	1.37	1.12
1987-88	1.19	1.37	1.12
Final Values	(3,500)	(1,200)	(2,300)
Base Year Value	(2,936)	(878)	(2,058)
Numerical Change	+564	+322	+242

[1]Based on Table 8, Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education (1978).

Table 61

Percentage Distribution Over Time of Minority and Black Graduates
by Institutional Category and by Degree Level[1]

	All Minorities				Blacks			
	1973-74	1974-75	1975-76	1976-77	1973-74	1974-75	1975-76	1976-77
	%[3]	%	%	%	%	%	%	%
TOTAL	4.8	5.3	6.5	6.3	3.9	4.3	4.6	4.6
I. Distribution by Institutional Category[2]								
State Colleges and University	3.3	3.7	4.7	4.5	3.0	3.3	4.4	4.2
State-Related Universities	5.7	6.0	8.4	7.7	4.4	4.9	4.5	4.0
Community Colleges	9.1	11.0	12.5	11.4	8.0	9.8	10.6	9.9
Private State-Aided Institutions	5.7	5.3	6.7	6.2	4.2	4.0	4.3	4.3
Private Colleges and Universities	3.7	3.8	3.6	4.1	2.8	2.8	2.7	3.2
Theological Seminaries	5.2	7.7	8.1	3.4	4.1	3.1	4.1	1.8
Private Junior Colleges	7.3	15.1	15.4	12.7	6.0	13.3	13.9	11.7
Proprietary Schools and State School of Technology	6.7	4.9	7.6	9.7	6.0	4.1	6.8	8.6
II. Distribution by Degree Level[2]								
Associate Degrees	6.5	8.5	9.9	9.4	5.6	7.5	8.5	8.3
Bachelor's Degrees	4.1	4.5	5.9	5.8	3.3	3.7	3.9	3.9
First-Professional Degrees	3.5	5.0	5.4	4.2	2.6	3.7	3.9	2.7
Master's Degrees	6.1	5.1	5.8	5.7	4.5	4.0	3.9	4.1
Doctor's Degrees	5.7	6.3	4.7	4.1	3.9	3.6	2.6	2.0

[1]Data provided by the Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education.

[2]Includes associate, bachelor's, first-professional, master's and doctor's degrees. Percentages are based on the total number of degrees awarded in each category.

[3]Percentages are based on the total number of degrees awarded at that level.

What Happens to a College Graduate?

Two years after the pioneering effort of William Toombs of The Pennsylvania State University in 1972, the Pennsylvania State Department of Education's Bureau of Information Systems continued to carry out a yearly effort to follow-up on college graduates as to their employment status, employment locale and other post-graduation activities.[1]

Under the guidance of Dr. William Donny, of the Division of Research, similar yearly surveys have been conducted. Recently these surveys have included a follow-up of the graduates of the master's, doctoral and first professional programs in Pennsylvania's institutions of higher learning, as well as associate degree and baccalaureate degree graduates. Figure 110 summarizes the more recent findings by combining data for the years 1975, 1976 and 1977 and reporting by degree level.

As might be expected, the graduate and first professional graduates have a higher percentage of employment generally--and in their field of preparation--but they also are more likely to find employment outside the state. It is interesting to note also, in Figure 110, that the associate degree graduates had no more difficulty than baccalaureate graduates in finding employment. They were, however, somewhat more likely to find employment in their field of preparation and to find it inside Pennsylvania rather than outside the state.

The Decline of Teacher Preparation

A decade or so ago, the schools of this nation were producing increasing numbers of teachers, on the average 10 percent more each year. As might be expected, the declining school population due to the birth decline has resulted in a decline in the number of teachers being prepared and graduating from Pennsylvania's schools of education.

Figure 111 shows this decline, which began after 1971-72 and also indicates the gap between those prepared (graduated) and those actually obtaining employment in a teaching capacity. The gap has narrowed in recent years from the high of 1971-72 but was still quite large as of 1976-77.

Table 62 indicates the number of teachers prepared (graduated) in Pennsylvania for certification in elementary or secondary levels and in the area of special education. Table 62 also gives the projections of the Division of Education Statistics as to the number that will be prepared between 1976-77 and 1987-88. As can be seen, the number prepared is seen as continuing to decline, but not so drastically as in recent years (see also Figure 112).

Figure 113 attempts to depict the historic decline while pictorially indicating the relative proportions of elementary, secondary and special education certification prepared students produced between 1967-68 and 1976-77. The rise of special education in importance is clearly visible here.

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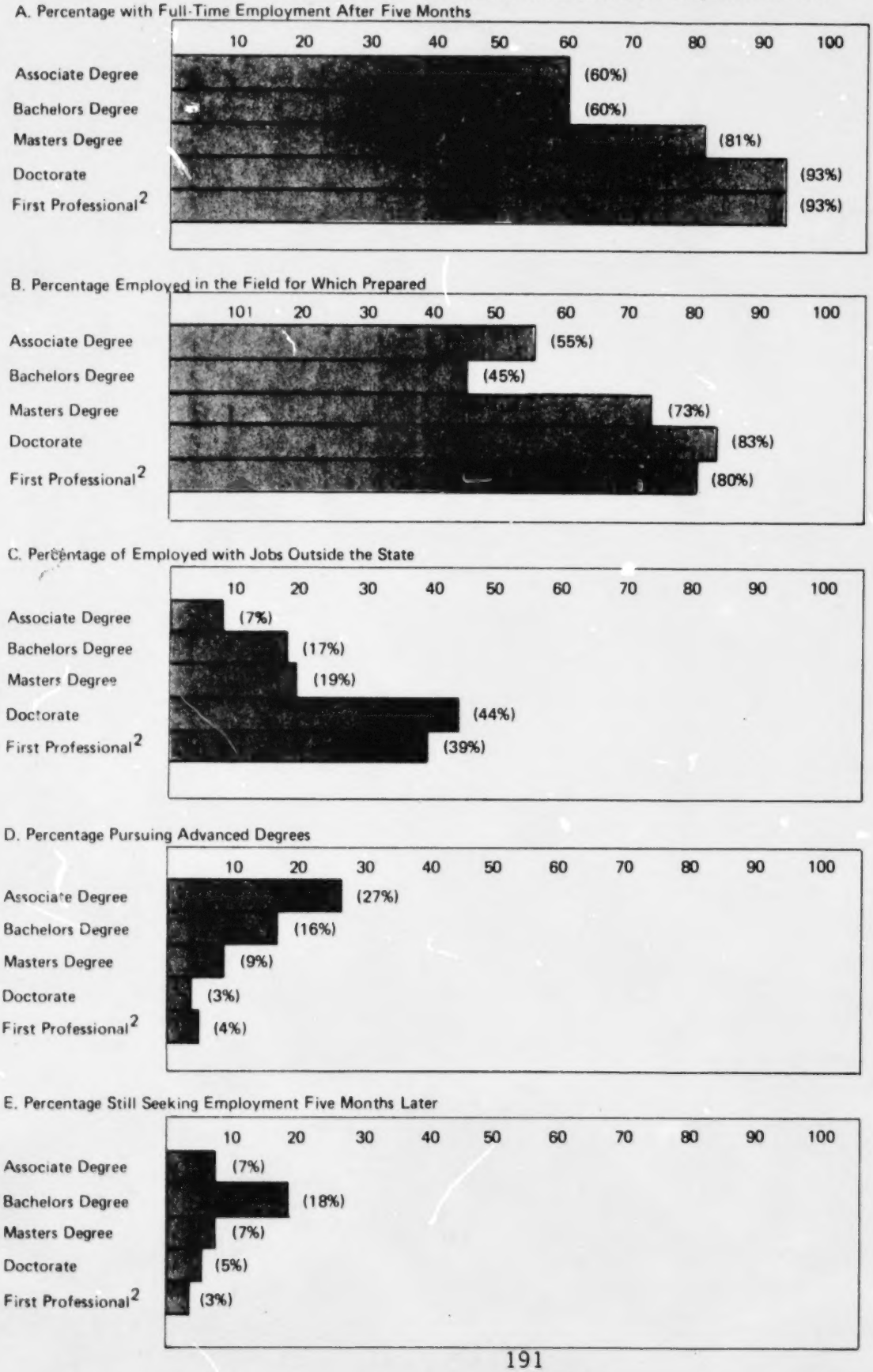
[1]Toombs, William, The Comm-Bacc Study: Postbaccalaureate Activities of Degree Recipients from Pennsylvania Institutions 1971-72. (Report No. 23) Center for the Study of Higher Education, The Pennsylvania State University.

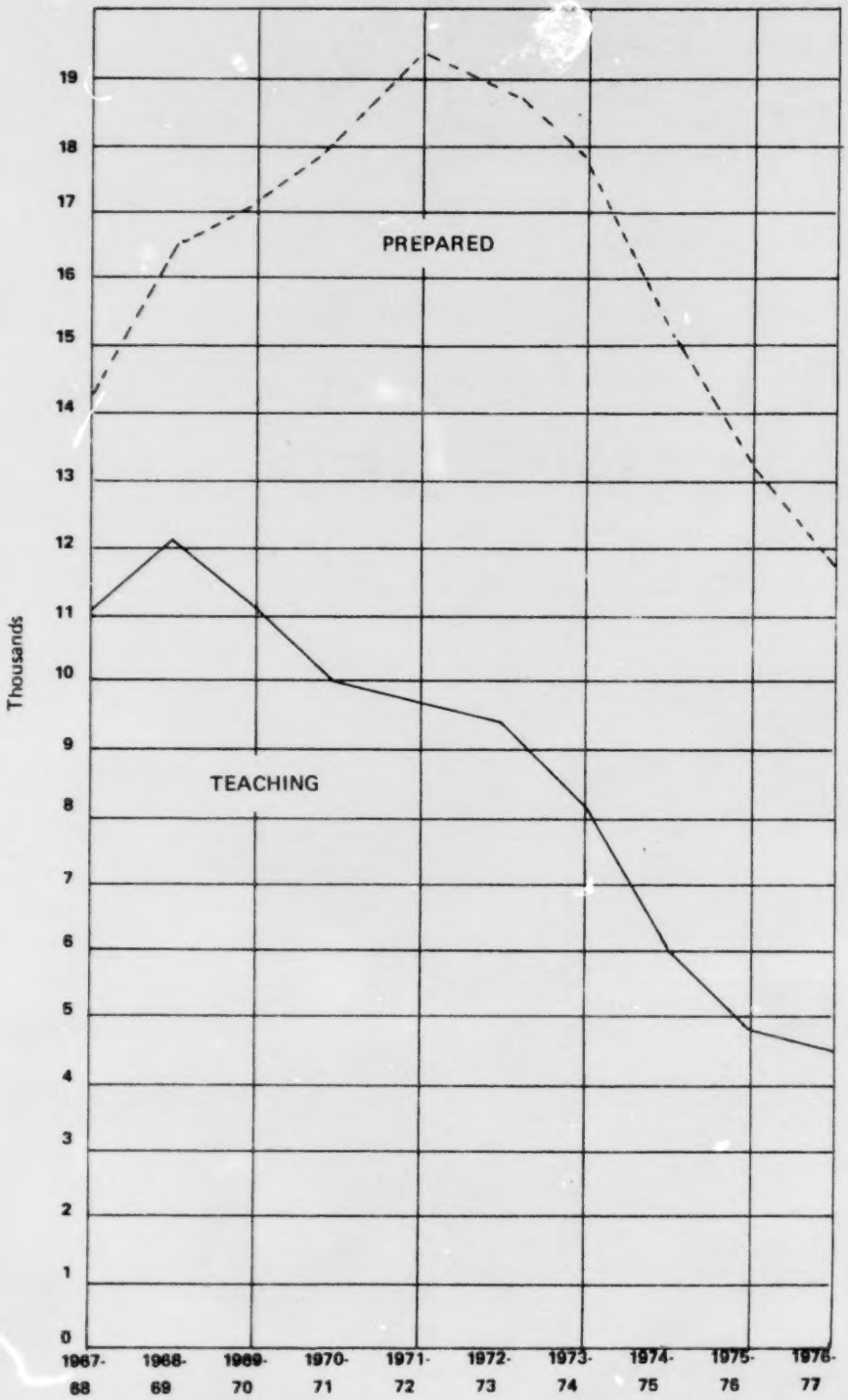
FIGURE 110 -- A GRAPHIC SUMMARY OF FINDINGS BASED UPON SUCCESSIVE FOLLOWUP SURVEYS OF THE PENNSYLVANIA COLLEGE GRADUATES OF 1975, 1976 AND 1977[1]


A. Percentage with Full-Time Employment After Five Months
10 20 30 40 50 60 70 80 90 100
Associate Degree (60%)
Bachelors Degree (60%)
Masters Degree (81%)
Doctorate (93%)
First Professional[2] (93%)
B. Percentage Employed in the Field for Which Prepared
101 20 30 40 50 60 70 80 90 100
Associate Degree (55%)
Bachelors Degree (45%)
Masters Degree (73%)
Doctorate (83%)
First Professional[2] (80%)
C. Percentage of Employed with Jobs Outside the State
10 20 30 40 50 60 70 80 90 100
Associate Degree (7%)
Bachelors Degree (17%)
Masters Degree (19%)
Doctorate (44%)
First Professional[2] (39%)
D. Percentage Pursuing Advanced Degrees
10 20 30 40 50 60 70 80 90 100
Associate Degree (27%)
Bachelors Degree (16%)
Masters Degree (9%)
Doctorate (3%)
First Professional[2] (4%)
E. Percentage Still Seeking Employment Five Months Later
10 20 30 40 50 60 70 80 90 100
Associate Degree (7%)
Bachelors Degree (18%)
Masters Degree (7%)
Doctorate (5%)
First Professional[2] (3%)

[1]Based on findings from *Postgraduate Activities: All Degree Levels in Pennsylvania* (published in 1975, 1976 and in 1977) by William F. Donny, Division of Research, Bureau of Information Systems, Pennsylvania Department of Education

[2]First professional includes law, medicine, dentistry, optometry, etc.

FIGURE 111
A COMPARISON OF THE TOTAL NUMBER OF TEACHERS PREPARED IN PENNSYLVANIA TO THE NUMBER REPORTED AS TEACHING BOTH IN AND OUTSIDE OF PENNSYLVANIA 1967-68 TO 1976-77



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

Table 62

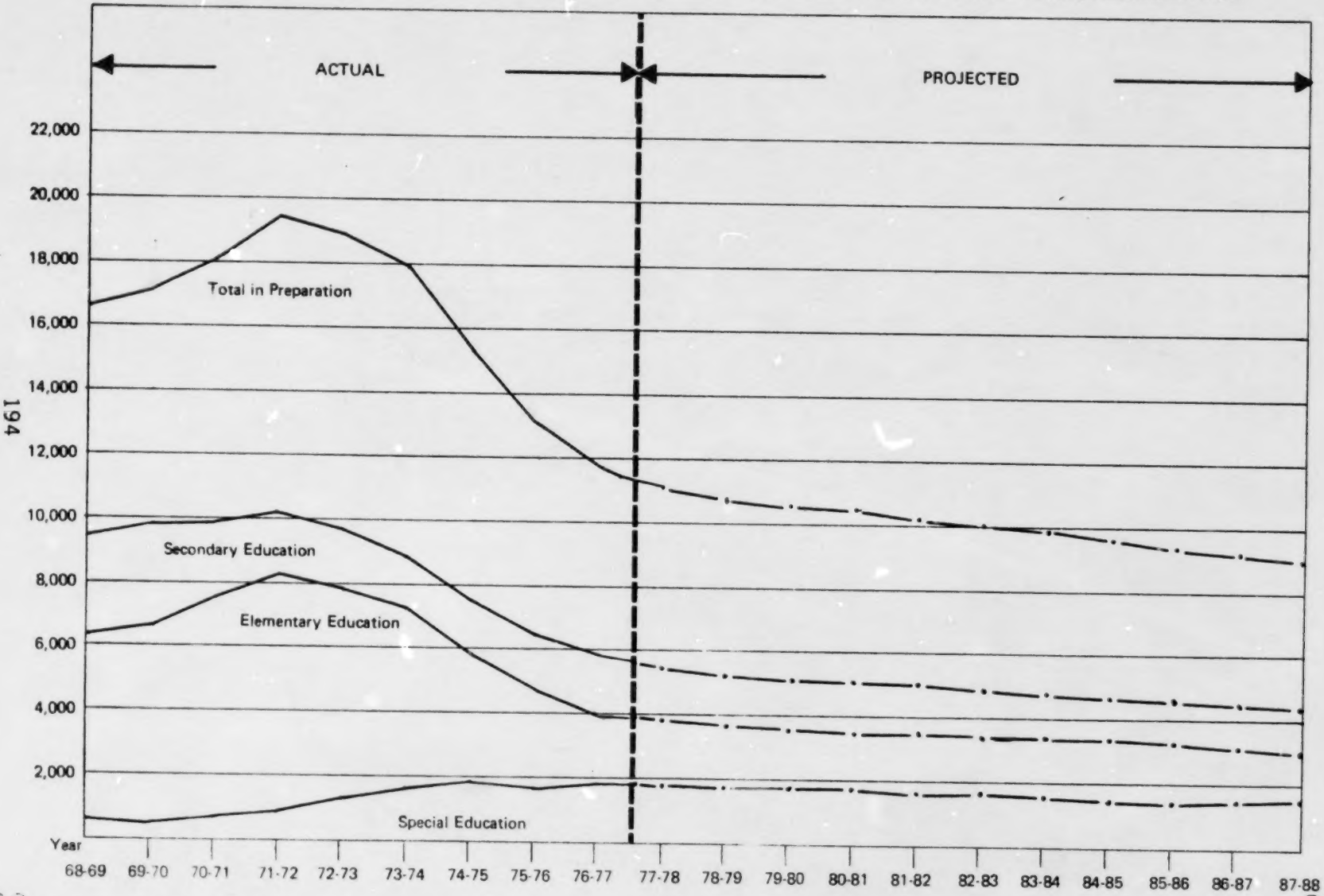
Preparation of Teachers for Initial Certification at the Elementary, Secondary and Special Education Levels by Pennsylvania Institutions of Higher Education[1]

Year	Total	Elementary	Secondary	Special Education
1968-69	16,465	6,405	9,479	581
1969-70	17,106	6,704	9,842	560
1970-71	18,102	7,462	9,930	710
1971-72	19,453	8,297	10,249	907
1972-73	18,881	7,844	9,695	1,342
1973-74	17,944	7,303	8,930	1,711
1974-75	15,267	5,879	7,509	1,879
1975-76	13,152	4,856	6,553	1,743
1976-77	11,769	4,019	5,817	1,933
		Projected		
1977-78	11,100	3,800	5,500	1,800
1978-79	10,800	3,700	5,300	1,800
1979-80	10,600	3,600	5,200	1,800
1980-81	10,400	3,500	5,100	1,800
1981-82	10,200	3,500	5,000	1,700
1982-83	10,000	3,400	4,900	1,700
1983-84	9,800	3,400	4,800	1,600
1984-85	9,600	3,400	4,700	1,500
1985-86	9,400	3,300	4,600	1,500
1986-87	9,200	3,200	4,500	1,500
1987-88	9,000	3,100	4,400	1,500

[1] From Table 9 of Projections: Selected Education Statistics for Pennsylvania to 1987-88, Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education, Harrisburg (1968).

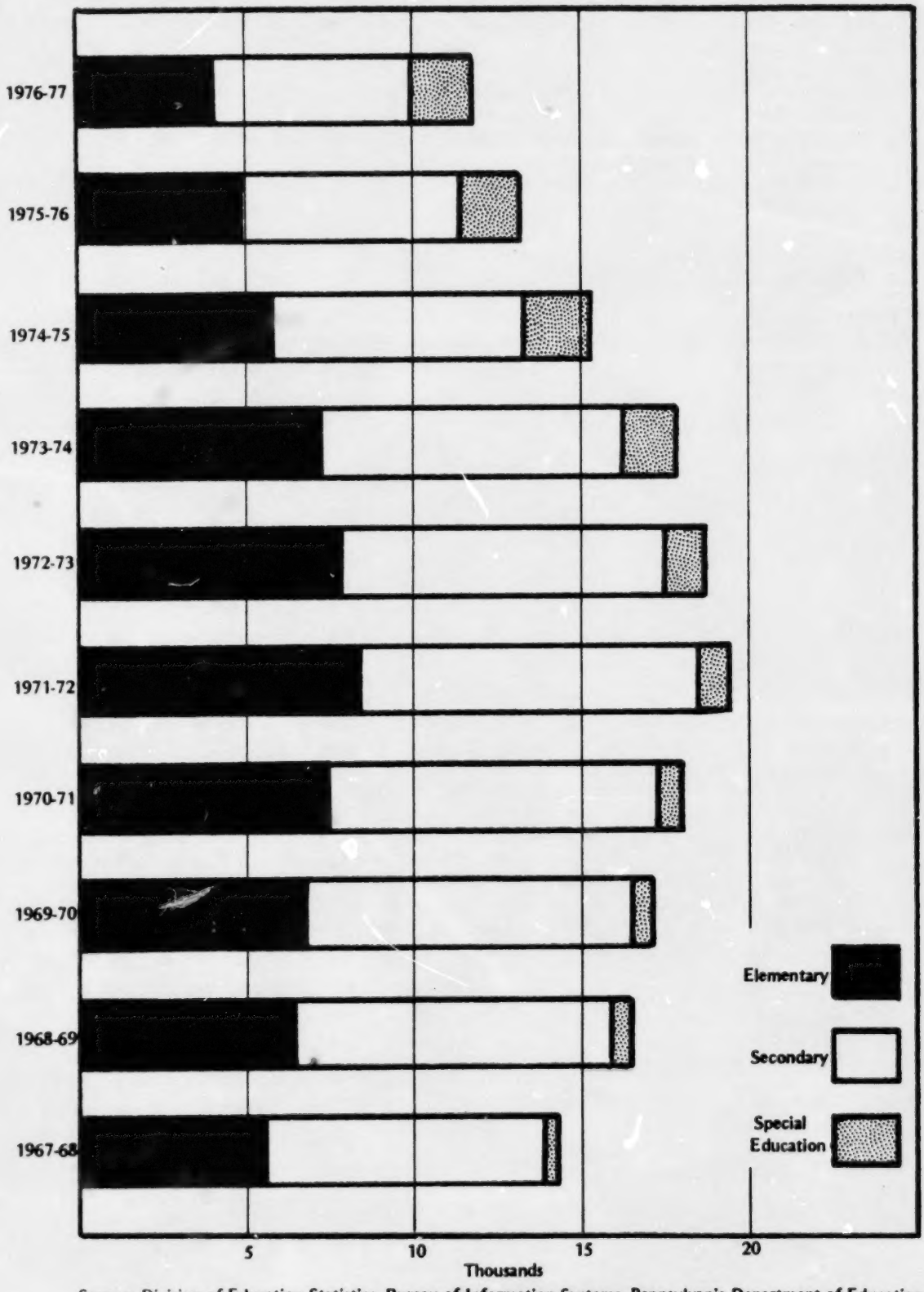
FIGURE 112

TEACHERS GRADUATED WITH INITIAL CERTIFICATION AT THE ELEMENTARY, SECONDARY AND SPECIAL EDUCATION LEVELS BY YEAR



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 113
ELEMENTARY, SECONDARY AND SPECIAL EDUCATION TEACHERS
PREPARED IN PENNSYLVANIA 1967-78 TO 1976-77



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

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Figure 114 depicts the 1976-77 proportion prepared for elementary, secondary or special education certification but shows them according to the category of institution from which graduated.

Obviously, the state colleges and university, which had the role, historically, as teacher colleges, still produce the largest number of teachers. The private colleges and universities and state-related universities are second and third, respectively. Figure 115 indicates the recent growth and decline of teacher production for these major categories of institutional production and projects their future production to 1987-88.

Follow-up of Teacher Trained Graduates

The 1977 follow-up study of college graduates by the Pennsylvania Department of Education indicated that the employment status of teacher education graduates by degree levels was as follows approximately five months after graduation.

	% Employed in Field Prepared		% Employed in Other Field		Total % Employed	
	In Pa.	Outside Pa.	In Pa.	Outside Pa.	In Pa.	Outside Pa.
Baccalaureate	34.6	13.6	13.7	3.0	48.3	16.6
Master's	67.8	9.6	5.6	1.0	73.4	10.6
Doctoral	64.0	14.3	1.49	0.6	78.9	14.9

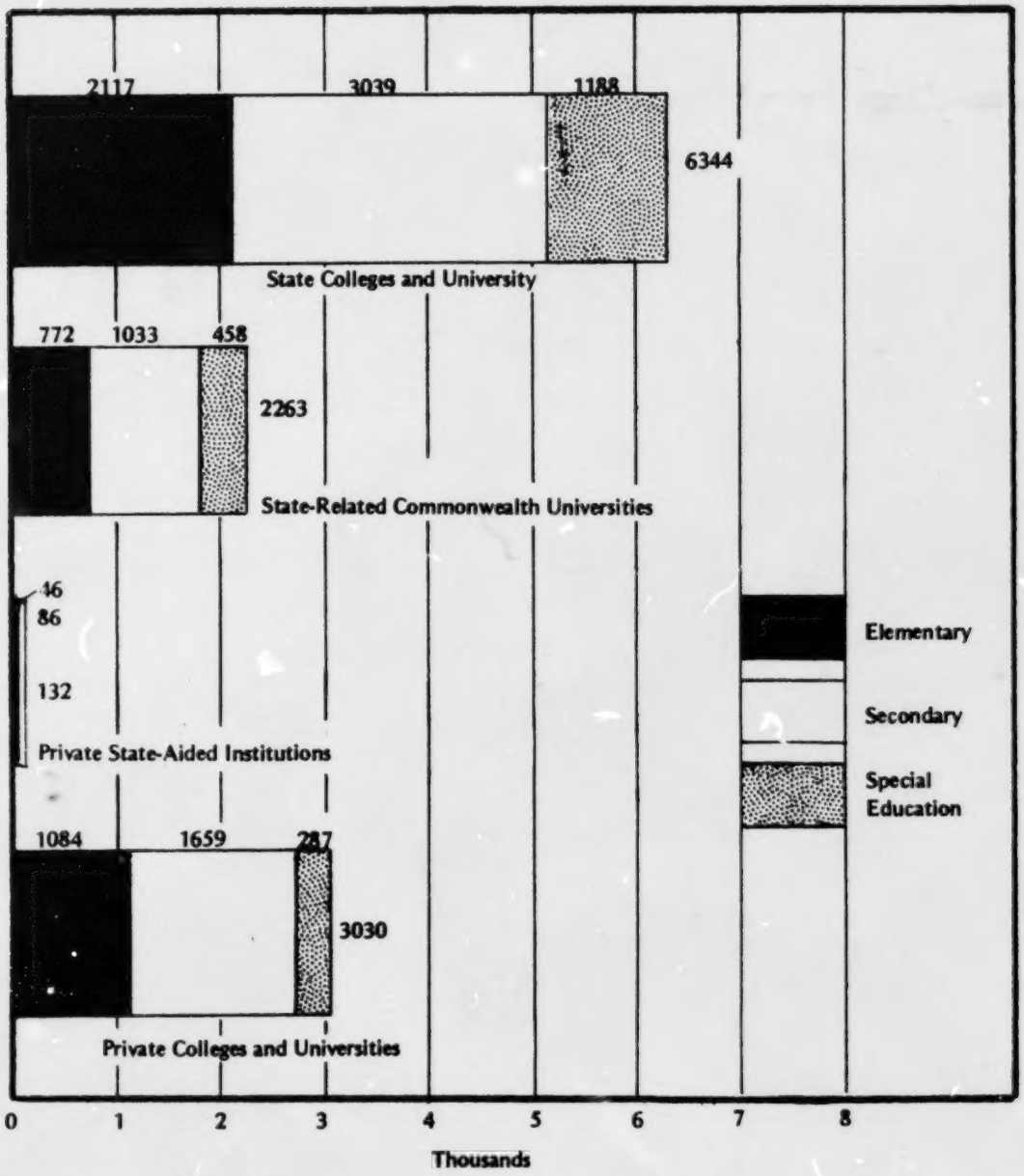
Some Final Summary Statistics

Figure 116 shows the growth in the number of each type of degree conferred in Pennsylvania between 1967-68 and 1976-77. Figure 117 shows the 1976-77 degrees by subject area, with education in first place for the public colleges and universities, and business management in first place for the private colleges and universities.

Figure 118 shows the number of bachelor's degrees conferred, by field of study, between 1970-71 and 1976-77. Figure 119 also does this for postgraduate degrees conferred from 1970-71 through 1976-77. In both cases, education predominates but the rapid rise of business and management as a field of study is clearly evident in Figure 118, while the decline of education, the social sciences, and arts and letters, is equally evident.

On the graduate level, the health professions along with business and management are the growth areas, but graduate health professional education is seen here (Figure 119) as recently having leveled off. This is not surprising, in view of the federal government's recent announcement that the total supply of physicians and other health professionals is approaching adequacy or even a surplus condition.

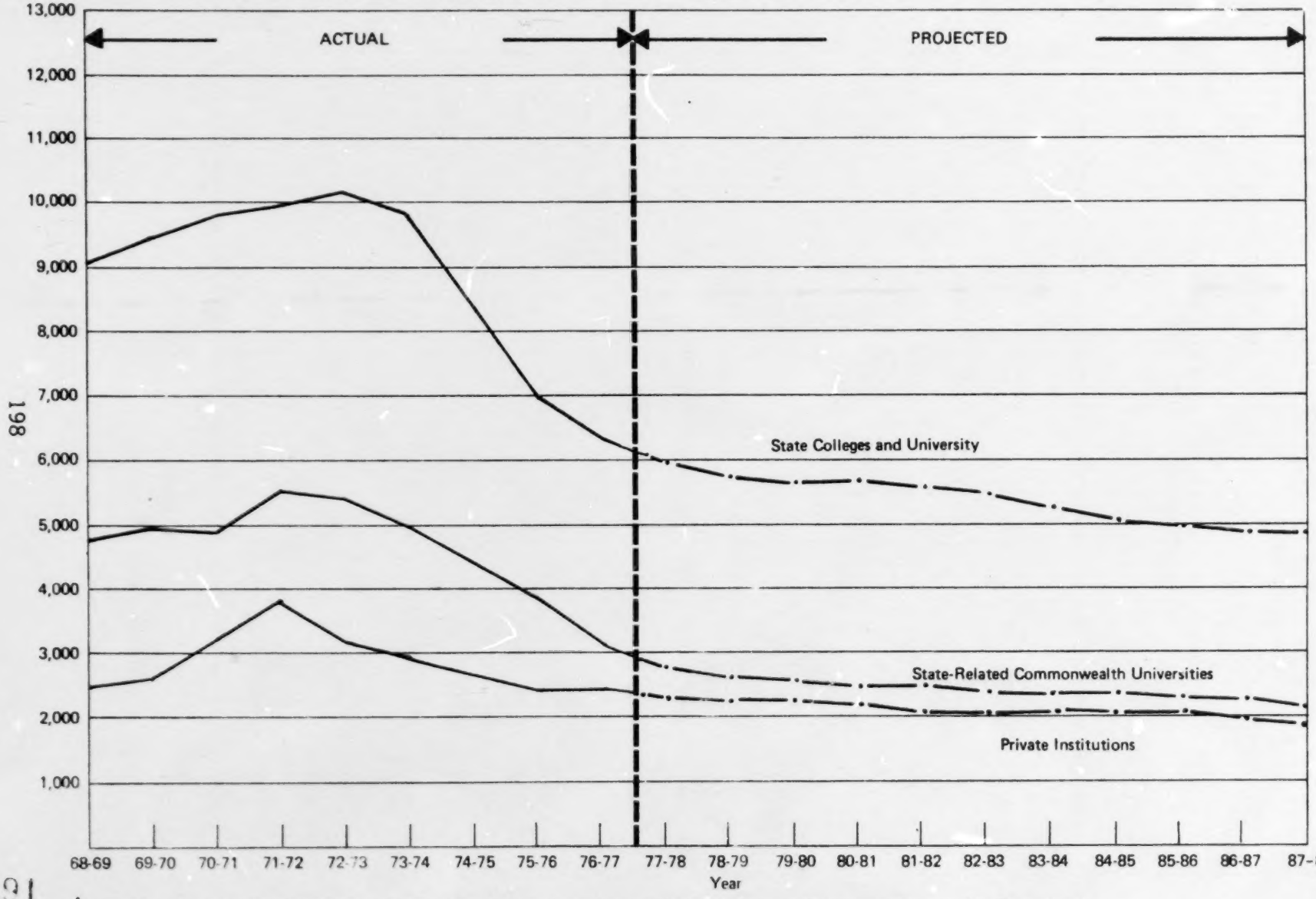
FIGURE 114
TOTAL NUMBER OF TEACHERS PREPARED IN PENNSYLVANIA
BY INSTITUTIONAL CATEGORY 1976-77



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

FIGURE 115

TEACHERS WITH INITIAL CERTIFICATION GRADUATED BY PENNSYLVANIA'S HIGHER EDUCATION SEGMENTS 1968-69 TO 1987-88



[1] From Table 9 of *Projections: Selected Educational Statistics for Pennsylvania to 1987-88*, Bureau of Information Systems, The Pennsylvania Department of Education (1968)

FIGURE 116

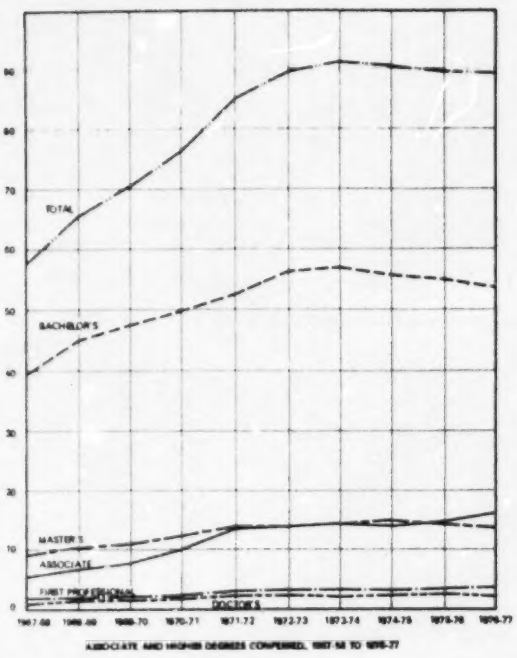


FIGURE 117

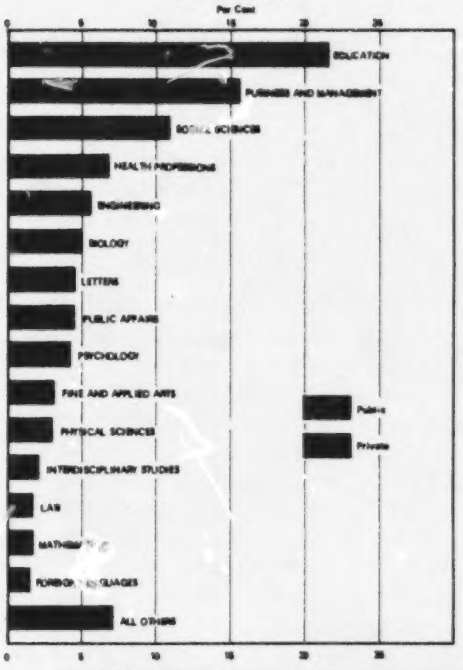


FIGURE 118

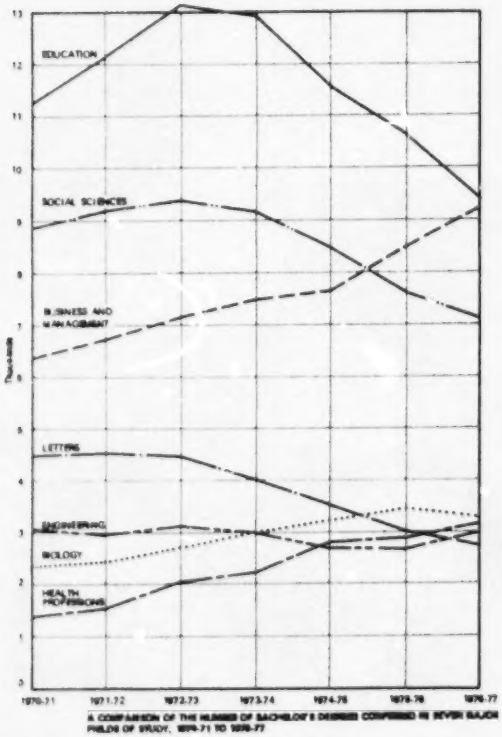
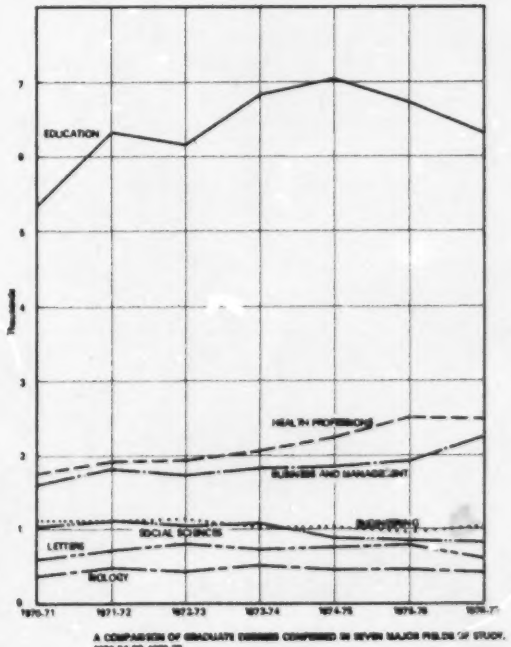


FIGURE 119



Source: Division of Education Statistics, Bureau of Information Systems, Pennsylvania Department of Education

The Condition of Higher Education

Higher education in Pennsylvania is seen here as being affected by rapidly rising costs due to inflation and the energy crisis, and as or about to be affected by a major decline in population of those who traditionally enter college. It is also possible that higher education is about to be even further affected by a decline in the labor market demand for the traditionally college-trained worker through a consequent decline in college participation rates.

All of this suggests that the institutions of higher education will have to take a hard look at what lies ahead and begin contingency preparations. These preparations might include a development of systematic way of reducing faculty at least human cost and with the least amount of disruption to ongoing programs. It also suggests the development of non-traditional modes of education designed to meet the needs of the adult learner, who will be increasing in numbers even as the traditional college age population declines.

Careful planning and preparation may be particularly crucial for small colleges. Programs such as that of Marywood College's external degree program may well come to the fore as the competition for students increases and survival as an institution becomes paramount. At best, however, adult and continuing education can only alleviate the anticipated enrollment declines of the 1980s and 1990s.

The decline in faculty and staff that is likely to be necessary may not, however, appreciably reduce the rapidly rising costs of higher education, since inflation could more than eliminate any savings due to personnel retrenchment.

Higher education now faces a difficult period of adjustment similar to that with which basic education has had to contend: lower enrollments but higher costs. The adjustments required may be more severe, due to the fact that higher education is not compulsory and is, hence, subject to labor market effects on college participation rates. Higher education undoubtedly faces a period of challenge in the coming years that will require a great deal of change and innovative efforts to meet these challenges will be needed.